This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

LAW REPORTS

OF

PATENT CASES.

BY

WILLIAM CARPMAEL, ESQ.,
MEMBER OF THE HONOURABLE SOCIETY OF LINCOLN'S INN,
MEMBER OF THE INSTITUTION OF CIVIL
ENGINEERS, ETC., ETC.

VOLUME II.

LONDON:
PRINTED AND PUBLISHED BY A. MACINTOSH,
20, GREAT NEW STREET.
1851.

STANFORD LAW LIBRARY

LIBRARY OF THE
LELAND STANFORD, JR., UNIVERSITY
LAW DEPARTMENT.

a.55198

JUN 27 1901

NAMES OF CASES;

WITH A

SHORT ABSTRACT OF THE NATURE OF THE INVENTION, AND OF THE POINTS DECIDED.

Names of Cases.	Reported Page.	Where reported in other works.
A.		
Abbott *v.* Williams et als.	381	9 Rep. Arts, 4th S., 103.
———————	383	
This patent was originally granted to the defendant, Mr. Williams, and assigned to the plaintiff. The invention consisted of causing hair, or other fibres, separate or mixed, to be spread out in an even manner on to a travelling endless surface of wire-cloth, such endless cloth, with the fibres spread thereon, meeting with a second endless cloth in such manner, that the layer of fibre became enclosed between the two endless wire-cloths, and in this state the fibres were passed into and impregnated with melted pitch, tar, or other cement; the fibres so between the wire-cloths were then pressed between pressing-rollers, and the excess of adhesive matter was expressed therefrom. By these means the fibres were made into a continuous sheet, and capable of being used for the sheathing of ships, and a variety of other purposes, for which felt had been previously used. The defendant took out another patent, and proceeded to work thereon. The process consisted of throwing fibres into a chamber, in one part of which there was a cylinder covered with wire-cloth, and from which the air was withdrawn, to produce a partial vacuum,—so that the fibres, by the rush of air to and through the cylinder, were carried against the surface of the cylinder, a		

c

Names of Cases.	Reported Page.	Where reported in other works.
larger or less thickness of fibre being obtained, according as the cylinder rotated slowly or more quickly. The fibre was constantly being removed from the cylinder as part of its surface passed out of the chamber, so that there was constantly an accumulation of fibre on one part of the cylinder, coupled with the removal of the sheet of fibre from another part of the cylinder. The sheet of fibre thus obtained was then passed through between pressing-rollers, there being adhesive matter applied above and below. The plaintiff filed his bill to obtain an injunction to restrain the defendants, and an injunction was granted *exparte*. Application was made to dissolve the injunction on the grounds, that there was no infringement, that the plaintiff had kept back an important fact, no mention having been made in the bill of the defendant having a second patent, and that the first patent was bad in law. His Honour held, that the long standing of the patent justified him in assuming that it was valid. That the second patent having been taken for making artificial leather, vellum, and parchment, the plaintiff was not to be expected to know that that patent was intended to make sheathing or felt, and therefore the plaintiff could not be required to mention such a matter in his bill, seeing that he came to the Court to ask that the defendants should be restrained from making sheathing for ships. His Honour assuming the patent good, considered there had been an infringement; the same manufacture had been produced, the means of getting a continuous sheet of fibre, and the mode of applying the adhesive matters, had been varied by defendants from those practised under the patent assigned to the plaintiff. His Honour continued the injunction so far as it restrained the defendants making ships' sheathing under the second patent, but dissolved it so far as it applied to making artificial skins. His Honour reserved the costs, giving the plaintiff leave to bring any action he might be advised, and directed an inspection of the modes of working by the defendants and plaintiff.		

Names of Cases.	Reported Page.	Where reported in other works.
B.		
Bickford et als. *v.* Skewes	449	1 Q. B., 938; 4 My. and Cr., 498; Webs. R., 211—214.
————————	453	
————————	454	
This patent was taken for improvements in the apparatus used for igniting the powder in blasting rocks, &c., which was called, "*The Miner's Safety Fuze.*" The plaintiffs filed a bill to restrain the defendant from using the invention, and an injunction was granted *exparte*. On the coming in of the answer, the defendant applied to the Court to have the injunction dissolved, on the grounds, that the plaintiffs did not invent the particular manufacture, but purchased the invention from an Irishman, whose name was unknown to the defendant; that there had been no long enjoyment by the plaintiffs, and that the bill and specification left it in doubt whether the patent was for the fuze or for the machinery for making the fuze. *The Vice-Chancellor.*—The Court sets the fact of enjoyment against the legal objection either of the badness of the specification or the fact of the patentee not being the inventor. The principles on which the Court acted in these questions was fully laid down in *Hill* v. *Thompson*. In this case there has been exclusive enjoyment for a length of time under the patent; that would be, *primâ facie*, such a circumstance as would bind the Court to recognise the question of injunction, either in granting it or dissolving it. I find the patent was sealed in September, 1831, an injunction was granted by the Lord Chancellor in September, 1837, and no attempt is made to dissolve it until Feb., 1838; and then the attempt, such as it was, has been allowed to continue a sort of meagre existence from month to month, while affidavits are put on the file. His Honour retained the injunction, but put the plaintiffs on terms to bring an action to try the validity of the patent. From this order the defendant appealed. *The Lord Chancellor.*—In matters of this kind an injunction is granted or refused by the Court, as the case may be, until the right has been established at law. If the patentee has been long in		

Names of Cases.	Reported Page.	Where reported in other works.
possession of his patent, the Court will not disturb the title thereto, but give credit to it till the patentee has had an opportunity of establishing his right at law. I cannot acquiesce in the statement at the bar, that the Court gives up all protection to the plaintiff where an action has been directed to be brought by him to prove his right, although it might have been reasonable, when the defendant was restrained from infringing the patent, to compel the plaintiff to proceed as quickly as possible to try his right at law, yet the Court ought not to place the plaintiff at risk and inconvenience if the defendant had conducted himself in such manner as to have caused the pressure complained of. The plaintiff had enjoyed his patent six years before the injunction was granted; the defendant acquiesces in the injunction granted for a further period of sixteen months, and if the defendant had not been guilty of delay, the plaintiff might have had reasonable time. His Lordship retained the injunction, and refused, under the circumstances, to direct a trial to be had in Devonshire at the next assizes.		
Bleaden, Galloway, et al. *v.*	567	
Bodmer's Patent, *in re* . . . . . . The patentee applied, by petition, to extend the period for which the letters patent were granted in 1824. The petition was presented in May, 1838, and a caveat had been entered. Their Lordships appointed August 17, 1838, for hearing the petition, on which day a sufficient number of their Lordships did not meet to form a Court, and November the 28th was next appointed: and the Attorney-General (Sir J. Campbell) objected, on the part of the Crown, that the letters patent had expired. Their Lordships were of opinion, that the words "prosecuted with effect before the expiration of the term originally granted in such letters patent," required something more to be done than the presentation of a petition. The application was refused.	422	2 Mo. P. C. C., 471; Webs. R., 740.
Boulnois *v.* Mackenzie . . . . . . In this case the defendant filed notice of objections in the language of the pleas, and an application was made to a Judge in chambers for further and	406	4 Bing. N. C., 127; 3 Hodge, 251; 5 Scott, 419; 6 Dowl., 215; Webs. R., 260.

Names of Cases.	Reported Page.	Where reported in other works.
better objections; and his Lordship directed the defendant to give further objections, stating the names and addresses of the persons who had previously used the invention, and also the parts of the specification which were said to be insufficient. The defendant gave further objections, setting forth the parts of the specification which were insufficient, and the name and address of one person who had previously used the invention. Application was made to the Court to dismiss the rule of the Judge in chambers, and to retain the objections as first given. The rule was made absolute to rescind his Lordship's order, so far as it required the names and addresses of the parties who were said to have used the invention before the date of the patent.		
C.		
Chanter *v.* Leese et als. . . . . . . The parties in this case had entered into an agreement, reciting that the plaintiff was possessed of several patents, and it was agreed, for the consideration mentioned, that the defendants should have the exclusive right in the patents, except as to certain towns, the defendants paying 400*l.* per annum, and 5*s.* per horse-power, for all boilers made or fitted according to the patents, and other payments were to be made under some of the patents. The action was for 200*l.* for the first half-year. The declaration set out the agreement, the breach being the non-payment of the 200*l.* The defendants pleaded, that the invention for boilers was not new at the granting of the patent, and that the invention for furnaces was not invented by the patentee. To these pleas the plaintiff demurred specially, because the pleas did not answer the whole of the first count, and that the matter, if true, only tended to invalidate part of the patents. Their Lordships ruled that there having been no acceptance or use by the defendants, the pleas were good, and avoided the whole contract.	422	4 M. and W., 295; 1 Horn and Hurlstone, 224.
Cornish and Sievier *v.* Keene et al. . This patent was for a manufacture of three descriptions of elastic fabrics, by	314	3 Bing. N. C., 570; 2 Hodge, 281; 4 Scott, 307; 6 Rep. Arts, 4th S., 102.

Names of Cases.	Reported Page.	Where reported in other works.
peculiar modes of weaving when yarns of india-rubber were used. The defendants were said to have infringed one wherein it was claimed to make elastic webs by combining covered elastic threads and non-elastic threads in the same plane, the effect being, that the non-elastic threads restrained the extent of elasticity of the elastic threads, and lighter elastic fabrics could be made than when using all elastic yarns in the warp. Evidence was given, on the part of the defendants, of several instances of previous making and using like descriptions of manufactures by other parties. His Lordship, in summing up, said,—"Now it will be a question for you gentlemen to say, whether, upon the evidence which you have heard, you are satisfied that the invention was or was not in use and operation at the time the letters patent were granted? It is obvious that there are certain limits to that question; the bringing it within that precise description which I have just given, must depend upon the particular facts that are brought before a jury. A man may make experiments in his own closet for the purpose of improving any art or manufacture in public use: if he makes these experiments and never communicates them to the world, and lays them by as forgotten things, another person who has made the same experiments, or has gone a little further, or is satisfied with the experiments, may take out a patent and protect himself in the privilege of the sole making of the article for fourteen years; and it will be no answer to him to say that other persons before him made the same experiments, and therefore that he was not the first discoverer of it; because there may be many discoverers starting at the same time, rivals that may be running on the same road at the same time, and the first which comes to the Crown and takes out a patent, it not being generally known to the public, is the man who has a right to clothe himself with the authority of the patent and enjoy its benefits. That would be an extreme case on the one side, but if the evidence that is brought in any case, when properly considered, classes itself under the description of experiments only, and unsuccessful experiments, that would be no answer to the validity of the patent. On the other hand, the use of an article may be so		

Names of Cases.	Reported Page.	Where reported in other works.
general as to be almost universal. In a case like that you can hardly suppose that any one would incur the expense and trouble of taking out a patent. That would be a case where all mankind would say, 'You have no right to step in and take that which is almost in universal use; for that is, in fact, to create a monopoly to yourself in this article, without either giving the benefit to the world of a new discovery, or the personal right to the value of the patent to which you would be entitled from your ingenuity and from your application.' Therefore it must be between those two (if I may so call it) limits that cases will range themselves in evidence; and it must be for a jury to say whether, supposing those points to be out of the question in any particular case, evidence which has been brought before them convinces them to their understandings that the subject of the patent was in public use and operation at that time,—at the time when the patent itself was granted by the Crown. If it was in public use and operation then, the patent is a void patent, and amounts to a monopoly; if it was not, the patent stands good. Now, gentlemen, you will have to apply your understanding to-day to the evidence in this case, which is in many parts contradictory,—in order to see whether you bring the case within the one or the other of these two descriptions, and whether this patent is or not a new invention." The jury found a verdict for the plaintiffs. Subsequently a rule was obtained to enter a nonsuit; for a new trial, the verdict being against evidence, and by reason of the discovery of new evidence; also for misdirection. The new evidence consisted of a specification of a previous patent. The specification now relied on had, however, been enrolled subsequent to the sealing of the plaintiffs' patent. Their Lordships held as follows:—The invention claimed consisted of combining covered elastic strands and non-elastic strands in the same plane; by thus combining the strands of india-rubber with yarns of cotton-flax and other non-elastic material the patentee was enabled to produce a cloth which should afford any degree of elastic pressure according to the proportions of the elastic and non-elastic materials. Now, the first objection made to the patent so described is, that the invention is not the subject-matter		

Names of Cases.	Reported Page.	Where reported in other works.
of a patent; that it is neither a new manufacture nor an improvement of any old manufacture, but is merely the application of a known material in a known manner to a purpose known before. The question, therefore, as to this point, is, does it come under the description of "any manner of new manufacture?"—which are the terms employed in the statute of James. That it is a manufacture can admit of no doubt; it is a vendible article, produced by the art and hand of man; and of all the instances that would occur to the mind when inquiring into the meaning of the terms employed in the statute, perhaps the very readiest would be that of some fabric or texture of cloth. Whether it is new or not, or whether it is an improvement of an old manufacture, was one of the questions for the jury upon the evidence before them. The materials, indeed, are old, and have been used before, but the combination is alleged to be, and, if the jury are right in their finding, is new, and the result or production equally so. The use of elastic threads, or strands of india-rubber, previously covered with filaments wound round them, was known before; the use of yarns, or other non-elastic material, was also known before; but the placing them alternately, side by side, together as a warp, and combining them by means of weft, appears to be new. It is a web combining the two qualities of great elasticity and a limit thereto. Their Lordships thought that, the evidence on both sides having been carefully listened to and weighed by the jury, there was no reason to disturb the verdict. Their Lordships also said, with regard to the third ground upon which the rule *nisi* was granted, viz., that since the trial the defendants have discovered a patent taken out by one Desgrand, the patent being sealed in November, 1832,—We think it sufficient to observe, that this specification was not enrolled till May, 1833; whereas the article made under the plaintiffs' patent was publicly made and sold in the London market, to a very large extent, in March and April of the same year. And, although the specification of Sievier's patent was not enrolled till July, 1833, we think the mere fact of the enrolment of Desgrand's specification (after the plaintiffs' patent was sealed and his discovery known in		

Names of Cases.	Reported Page.	Where reported in other works.
the market) does not of itself alone afford any proof whatever of the want of novelty in the manufacture made under the plaintiffs' patent.—Rule discharged.		
Crane *v.* Price et als.	611	4 M. and G., 580; Webs. R., 377, 393; 18 Rep. Arts, 4th S., 102.
————————	669	
This patent was taken for improvements in the manufacture of iron, and the claim to invention consisted of the use of hot-blast in combination with anthracite or stone-coal, the specification disclaiming the use of hot-blast separately, and also the separate use of anthracite or stone-coal. The use of hot-blast was claimed generally by Mr. Neilson under a previous patent, and the plaintiff, on taking his patent, obtained a license from Mr. Neilson for the use of hot-blast. The defendants had also a license from Mr. Neilson, and had long been making iron by the use of coke of bituminous coal subsequent to the granting of the plaintiff's patent. The defendants proceeded to use one-third anthracite and two-thirds coke of bituminous coal in combination with hot-blast. For the defendants it was contended, that a patent could not be valid which required the use of another patent; and that the combination of anthracite, or stone-coal, with hot-blast in making iron was no manner of new manufacture. At the trial a verdict was taken for the plaintiff on the evidence given, subject to the questions being argued before the Court as a special case. Their Lordships held, that if the result produced by such a combination (hot-blast and anthracite) is either a new article, or a better article, or a cheaper article to the public, than that produced before by the old method, that such a combination is an invention or manufacture intended by the statute. (*The King* v. *Wheeler*; *Hill* v. *Thompson*.) There are numerous instances of patents which have been granted where the invention consisted in no more than in the use of things already known, and acting with them in a manner already known, and producing effects already known, but producing those effects so as to be more economically or beneficially enjoyed by the public. (*Hall* v. *Boot*; *Derosne* v. *Fairrie*; *Hill* v. *Thompson*; *Rex* v. *Daniell*.) It was objected, in the course of the argument, that the quantity or degree of		

Names of Cases.	Reported Page.	Where reported in other works.
invention was so small that it could not become the subject-matter of a patent. But we think, if it were necessary to consider the labour, pains, and expense incurred by the plaintiff in bringing his discovery to perfection, that there is evidence in this cause that the expense was considerable and the experiments numerous. But, in point of law, the labour, thought, or experiments, and the expenditure of money, are not the essential grounds of consideration on which the question whether the invention is or is not the subject-matter of a patent ought to depend; for if the invention be new, and useful to the public, it is not material whether it be the result of long experiments and profound research, or whether by some sudden and lucky thought or mere accidental discovery. As to the first issue, namely, whether the defendants have infringed the patent, we think it clearly appears on the evidence, that the defendants have used, either in part or in the whole, the combination described in the specification. Now, it is further argued, that in point of law no patent can be taken out which includes the subject-matter of a patent still running, or in force. No authority was cited to support this proposition; and the case, which was before *Lord Tenterden*, and in which he held, that where an action was brought for an infringement of improvements in a former patent granted to another person, and still in force, that the plaintiff must produce the former patent and specification. That, at least, affords a strong inference that the second patent was good. (*Lewis* v. *Davis*.) The case of *Harmer* v. *Playne* is a clear authority on the same point, and upon reason and principle there appears to be no objection. The new patent, after the expiration of the old one, will be free from every objection; and, whilst the former exists, the new patent can be legally used by the public by procuring a license from Neilson, or by purchasing the apparatus from him or some of his agents; and the probability of the refusal of a license to any one applying for it is so extremely remote, that it cannot enter into consideration as a ground of legal objection.—Judgment for the plaintiff.		
Crofts *v.* Peach et al. . . . . . . An application was made on behalf of	233	2 Hodges, 110; Webs. R., 268.

Names of Cases.	Reported Page.	Where reported in other works.
the defendants in an action for infringing a patent taken by the plaintiff for improvements in the manufacture of lace, that the plaintiff should hand over to the defendants specimens of the lace made by the plaintiff's machine, in order to enable the defendants' witnesses to show that it was old, and also that that made by the defendants was not like the plaintiff's manufacture. *Chief Justice Tindal.*—The effect of this application is to ascertain the evidence which the plaintiff will produce at the trial. The defendants may plead that the invention is not new, if that be the fact. The specification gives the necessary information.		
Curtis et als. *v.* Cutts	430	8 Law Journ.
In this case an injunction had been granted by the Vice-Chancellor, who refused to dissolve the same on the coming in of the answer. The defendant appealed from the decision. The bill did not set out with any clearness what had been done by the defendant, but generally stated that he had infringed the patent. *The Lord Chancellor.*—The bill does not state such a case as to justify the granting of an injunction; but the answer does state that which, if stated in the bill, would have entitled the plaintiffs to an injunction as regards their title. There are, however, other statements contained in the answer which throw doubt on the right of the plaintiffs to the injunction prayed by them. The answer disputes the validity of the patent, and states that the invention is not new, and that the specification is imperfect. On the other hand, the plaintiffs contend that there has been a long possession and enjoyment under the letters patent of 1825. This Court gives credit, no doubt, to long enjoyment under the letters patent, until it is proved that they are bad; but then there must be not only enjoyment, but exclusive enjoyment under them. The question is, whether in this answer such a case is admitted. The answer states, that the plaintiff, Parr, when not interested in the patent, had made a machine upon the principle claimed by the letters patent, and insisted that the letters patent were not new. The defendant shows that, by the exercise by the plaintiff, Parr, when not interested in the letters patent, and by the defendant since,		

Names of Cases.	Reported Page.	Where reported in other works.
is inconsistent with the exclusive right of the plaintiffs; and not only negatives exclusive enjoyment by Dyer (the patentee) and the plaintiffs, but shows that the title of the plaintiffs was disputed by the very party who now sets up exclusive enjoyment. If the difficulty had been only the generality of the statement in the bill, I should have supported the letters patent; but the allegations in the answer negative the exclusive enjoyment claimed by the plaintiffs. His Lordship dissolved the injunction, giving the plaintiffs liberty to bring an action, or to make a new application in another case, as there was no doubt from the answer that the defendant was infringing the patent.—Costs reserved.		
Cutler's Patent, *in re*	523	4 My. and Cr., 510; Webs. R., 418.
This was a petition to the Lord Chancellor, that letters patent should pass the great seal, notwithstanding a *caveat* had been lodged against it. His Lordship referred the petition back to the Attorney-General, who, on hearing the parties, decided that the inventions were not similar; and the Attorney-General stated that he would so report to the Lord Chancellor. But the opposing parties requested a further hearing, in order that they might have an opportunity of showing that the petitioner's invention was old. Mr. Attorney-General granted the further hearing, and reported to the Lord Chancellor that the petitioner's invention was old. On this decision an application was made to the Lord Chancellor to seal the patent. His Lordship examined the invention, and also that said to be similar to it, and which had induced the Attorney-General to report that the invention was old; and his Lordship directed the patent to be sealed, and the opposing parties to pay the costs.		
Cutts, Curtis et als., *v.*	430	
D.		
Dewick et al., Fisher *v.*	416	
Downton's Patent, *in re*	522	Webs. R., 565; 12 Rep. Arts, 4th S., 105.
This was an application by the widow of the patentee to extend the term of letters patent, and their Lordships re-		

Names of Cases.	Reported Page.	Where reported in other works.
ported in favour of extending the period for which the letters patent had been granted. Application was also made that their Lordships should allow costs as against the opposing party, which was granted; their Lordships remarking, that the Attorney-General appeared for the Crown and the public.		
E.		
Erard's Patent, *in re* . . . . This was an application under the statute, that the term of the letters patent granted to the petitioner might be extended. This was the first application under the statute. The patent was extended for a further term of seven years. And their Lordships, in giving judgment, said, "That in all such cases their Lordships would require a strong case of hardship to be made out, as well as a strong case upon the utility of the invention."	112	Webs. R., 557; 5 Rep. Arts, 4th S., 58.
Everington et als., Macintosh et als. *v.*	186	
F.		
Few *v.* Guppy . . . . In this case proceedings were pending in Chancery against the defendant for infringement, who filed a cross bill, setting forth that the patent was held in trust by the plaintiff for more than five persons, and that the patent was void. The bill set out certain deeds, and alleged that, if all deeds, papers, books, and documents, relating to the trust were examined, it would be found that the patent was void, by reason of it being held in trust for more than five persons. The answer of Mr. Few admitted the possession of many books, letters, and papers, partly handed to him as solicitor, and others relating to different inventions and other private matters. The Vice-Chancellor held that the deeds, agreements, and licenses, should be produced; but that other documents, in which other persons might be interested, ought not to be produced. On appeal from this decision the Lord Chancellor directed that all those documents which related to the assignments	235	1 My. and Cr., 487.

Names of Cases.	Reported Page.	Where reported in other works.
and licenses should be produced, the cross bill, as worded, not calling for anything beyond what related to the assignment and licenses. In the course of subsequent proceedings application was made for leave to file another bill for further discoveries, which the Court allowed.		
Fisher *v.* Dewick et al. . . . . . . Application was made in this case, that the defendants should give further and better objections. The Court held, that where a defendant states that parts of the specification are defective or not sufficient, the parts should be stated.	416	4 Bing., N. C., 706; 6 Dowl., 739; Webs. R., 264.
G.		
Galloway's Patent, *in re* . . . . . . This was an application to extend the term of letters patent for paddle-wheels. Their Lordships recommended the term of the patent to be extended.	107	
Galloway et al. *v.* Bleaden . . . . This was an action brought by the plaintiffs against the defendant for infringing a patent granted for improvements in paddle-wheels, which consisted in having the float-boards in parts, such parts being fixed on a cycloidal line, which would be generated by the wheel when rotating, and moved through space at the rate the vessel ought to be propelled by the power employed. The defendant used less number of parts to each float-board, but he fixed them within the line pointed out by the specification. The specification stated, that Mr. Field had made experiments previous to the patent, but had failed; and the question chiefly turned on the fact of whether Mr. Field had previously published the same invention. The jury found for the plaintiffs.	567	Webs. R., 521; 13 Rep. Arts, 4th S., 220.
Gillett et al. *v.* Wilby . . . . . . This patent was for improvements in public vehicles, called cabs, and consisted of so constructing such carriages that the passengers should enter in front and the driver's seat be behind. The evidence showed that the defendant had only infringed part of the invention. The declaration stated, that he had used and put in practice the improvements. On the part of the de-	540	9 C. and P., 334; Webs. R., 270; 13 Rep. Arts, 4th S., 121.

Names of Cases.	Reported Page.	Where reported in other works.
fendant it was contended, that the infringement of part only was not sufficient. The Court held that if any part was infringed it would be enough. It was then urged, that it had not been proved that the defendant had infringed. All that had been shown was, that the defendant kept cabs, and that one like a model produced started from and returned to his yard. The question was left to the jury on the evidence, and they found a verdict for the plaintiffs.		
Guppy, Few *v.*	235	
H.		
Hague, Losh *v.*	464	
Harrison, Parkin *v.*	677	
Hicks et als., Lovell *v.*	176	
J.		
Jupe *v.* Pratt	242	Webs. R., 145; 8 Rep. Arts, 4th S., 112.
————	289	
In this case the patent was for so constructing expanding dining and other tables, that the parts composing the original table should diverge from a common centre. Various arrangements of apparatus were shown and described in the specification for moving the several sections of the original tables. The defendant did not use any of them. His table, however, consisted of angular pieces, converging to a common centre, like those of the plaintiff's patent, the means of causing the parts to move outwards, and the shapes of the filling-pieces, or leaves, employed were different, which enabled the defendant to obtain a different form of enlarged table to that shown by the plaintiff. The jury found for the plaintiff. A rule *nisi* was subsequently obtained, and the whole question was argued before the Court. It was objected, that the patent was for a principle; and, also, that the plaintiff claimed a mode of acting invented by another. *Mr. Baron Alderson.*—You cannot take out a patent for a principle. You may		

Names of Cases.	Reported Page.	Where reported in other works.
take out a patent for a principle coupled with the mode of carrying that principle into effect, provided you have not only discovered the principle, but invented some mode of carrying the principle into effect. It was objected, that the plaintiff had included one mode of causing the parts of the original table to diverge, which had been suggested by a workman. *Mr. Baron Alderson*.—If he (the patentee) invented one mode, he may get a person to invent another. The Court held, that under pleas which stated that the invention was not new, and that the patentee was not the inventor, a defendant cannot object that the patent was for a principle. To raise that question the pleadings must be directed to such an objection.		
K.		
Kay's Patent, *in re*	168	3 Mo. P. C., c. 24; Webs. R., 568.
This was an application to extend the term of the letters patent. Proceedings had for a long time been pending in the Courts of Law and Equity, and their Lordships at first doubted whether they ought to proceed before judgment had been obtained in favour of the patent; but on finding that the patent would expire before judgment could be obtained, their Lordships proceeded and reported in favour of extending it for three years; stating that, should the judgment of the Courts be against the validity of the patent, the proceedings before them would not alter the case.		
Kay *v.* Marshall	117	1 My. and Cr., 373; 1 Beav. 535; 1 Keen, 190; 5 Bing., N. C., 492; 8 Cl. and Fin., 245; 7 Rep. Arts, 4th S., 35; 10 Rep. Arts, 4th S., 51.
———	127	
———	159	
———	165	
———	169	
This patent was taken for "*new and improved machinery for preparing and spinning flax and other fibrous substances by power*." The claim to invention was in respect of new machinery for preparing flax, hemp, and other fibrous substances—the macerating vessels marked B, and trough of water marked C, and		

Names of Cases.	Reported Page.	Where reported in other works.
that which I claim, in respect to the improvements for spinning flax, hemp, and other fibrous substances, is the trough marked D, for holding the rovings when taken from the macerating vessel, and the placing of the retaining rollers and the drawing rollers nearer to each other than they have ever before been placed, say within two and a-half inches of each other. The defendant demurred generally, and the Vice-Chancellor ordered the matter to stand over, that the plaintiff might bring such action as he might be advised. Against this order the plaintiff appealed. His Lordship said, after stating the contents of the bill, "To this bill the defendant put in a general demurrer, and, upon the argument in the Court below, the Vice-Chancellor ordered the demurrer to stand over, with liberty to the plaintiff to bring an action to try the validity of the patent. No instance has been produced of such a course having been ever taken upon a demurrer; and I am of opinion, that however beneficial it might be in the result, by bringing the question in issue to a speedy determination, it is too great a departure from the practice of the Court, and too inconsistent with the nature of the question before the Court upon a demurrer, to be supported. Upon a demurrer no question of fact can be in issue. If the plaintiff, asking for equitable relief upon the grounds of a legal title, states upon his bill a title which cannot be supported at law, the defendant may take advantage of it by demurrer; but if the plaintiff states himself to stand in the position of having so far established his title at law as to give him at least a *primâ facie* title, the Court will so far give credit to such circumstance as to afford him the aid of its jurisdiction until the suit shall be in such a state as to call upon the Court for a decision." The demurrer was overruled, and on hearing the case an action directed to be brought. The case was tried at York, and resulted in a verdict for the plaintiff, subject to a special case for the opinion of the Court, and which was stated as follows:—"That before the granting of the patent, flax, hemp, and other fibrous substances, were spun at or with machines with slides, by which the reach was varied according to the length of staple or fibre of the article		

Names of Cases.	Reported Page.	Where reported in other works.
to be spun, and that that has been a fundamental principle of dry spinning known and used before the granting of the patent, the reach having varied in cotton-spinning between seven-eighths of an inch to one and a-half inch; in flax, or line-spinning, from fourteen to thirty-six inches; in tow-spinning from four to nine inches; in worsted-spinning from five to fourteen inches. But before the granting of the patent it was not known that flax could be spun by means of maceration, as having a short fibre at a reach of two and a-half inches, or about those limits. But before that time Horace Hall had taken out a patent, and the machines manufactured according to that patent were constructed with the reach of four and three-quarter inches." This case was sent by the Master of the Rolls to the Court of Common Pleas, and their Lordships reported their opinion that the patent was invalid in law; their Lordships considering, that it was not new to make spinning machinery with a reach of two inches and a-half, it having been the custom to make spinning machinery with reaches according to the length of fibre to be spun. Their Lordships also considered, that the macerating of flax having been described in Hall's patent, no valid patent could be taken out for that process. The patent was taken out for these two distinct processes. The Master of the Rolls agreeing with this opinion decreed accordingly, and the case came on ultimately before the House of Lords, as an appeal against the judgment of the Master of the Rolls. On the part of the patentee it was contended, that the patent must be taken to be for the combined process, not as a claim to the two separate things. And for the defendant it was urged, that the patent was for two distinct things, each of which, if infringed alone, would, if the patent be good, render a party liable to be an infringer. Their Lordships held, that it was not "one invention, namely, the macerating the flax, and using the flax so macerated with a particular machine," as contended for on behalf of the patentee, but a claim for improvements in machinery for spinning; and, according to the case as agreed on, looking at the machinery alone, there was no invention to support the patent. Their Lordships considered the patent void, and dismissed the appeal with costs.		

Names of Cases.	Reported Page.	Where reported in other works.
Keene et al., Cornish and Sievier *v.* . .	314	
Keene et als., Westhead *v.*	425	
Kollman's Patent, *in re* . . . . . . This was an application to extend the term for which the letters patent were granted for improvements in the mechanism of piano-fortes. Their Lordships having considered that the invention was meritorious, and that the patentee had not been remunerated, reported in favour of the petitioner, and the term of the patent was extended for seven years.	520	Webs. R., 564.
L.		
Leese et als., Chanter *v.*	422	
Losh *v.* Hague . . . . In this case the patent was taken for certain improvements in the construction of wheels for carriages to be used on railways. There were several claims to invention, consisting of means of forming spokes and rings of wrought iron wheels. An application was made for an injunction to restrain the defendant, in whose behalf it was contended that the plaintiff's invention was not new; to prove which fact the specification of a previous patent granted to a Mr. Paton was produced. His Honour the Vice-Chancellor granted an injunction, stating, that he had no doubt that the defendant had infringed the patent, but as doubts were raised in his mind by the specification of Paton's patent, the plaintiff must undertake to bring an action before the second day of Michaelmas term. In respect to the question of whether the plaintiff had come to the Court in time, his Honour said,—"On the 23d of March the plaintiff received some information that there was an invasion of his patent, and some portion of time, it appears, was spent in making inquiries; there was notice given distinctly on the 8th of May. Then some further correspondence takes place, and letters pass between the parties; and then a bill is filed on the 7th of July, and the application is virtually made. I cannot but think, therefore, that the plaintiff has come in sufficient time."	464	7 Dowl., 495; Webs. R., 202; 9 Rep. Arts, 4th S., 224.

Names of Cases.	Reported Page.	Where reported in other works.
Lovell *v.* Hicks et als.	176	2 Yo. and Col., 46, 472; Webs. R., 295.
————	183	
In this case the patentee, the defendant, Hicks, described in his specification a mode of constructing ovens and apparatus so as to obtain spirits when baking bread, and the present proceeding was taken by the plaintiff by reason of certain arrangements between him and the defendant, with a view to set aside a license, by reason of fraud on the part of the defendant, representing that the invention would produce a certain result, which was found not to be the case; and that the defendant had introduced spirit in certain trial experiments, by which the plaintiff had been induced to enter into the deed. His Lordship directed the deed to be cancelled, that the defendants should be restrained from proceeding at law to recover from the plaintiff the sum agreed to be paid; and ordered an account to be taken of all sums paid by the plaintiff, and directed that that amount, with four per cent. interest, should be repaid the plaintiff, together with costs. And his Lordship decreed, that where the whole consideration for the agreement failed, the whole of the defendants were liable, though they did not participate in the fraud.		
Lukey *v.* Robson	413	9 Rep. Arts, 4th S., 55.
In this case the patent was for instruments for obtaining instantaneous light. An *ex parte* injunction had been obtained, and the defendant had not taken any step to dissolve the injunction for two years; and the cause came on for hearing on the bill and answer. It was contended, that the patent was void by reason of the invention not being new. His Honour, in giving judgment, said, the language of the specification appeared to him to be free from obscurity. The plaintiff had discovered such a mode of preserving sulphuric acid in a state of proximity to certain inflammable substances as that it might be suddenly brought in contact with them at any moment it was required, or kept separate for any length of time; and it was in this his invention consisted. It was not in the use of the sulphuric acid or the other materials, but in the combination. The injunction was retained.		

Names of Cases.	Reported Page.	Where reported in other works.
M.		
Macintosh et als. *v.* Everington et als. This patent was taken for rendering fabrics waterproof, by applying india-rubber cement between two fabrics. The jury found a verdict for the plaintiffs.	186	6 Rep. Arts, 4 S., 317.
Mackenzie, Boulnois *v.*	406	
Marshall, Kay *v.*	117	
May, Protheroe *v.*	531	
Morgan et al. *v.* Seaward et als. . .	1	2 M. and W., 544; New T. R., Part 12; Webs. R., 167; 4 Rep. Arts, 4 S., 275; 7 Rep. Arts, 4 S., 182; 8 Rep. Arts, 4 S., 45.
———————— . . .	37	
———————— . . .	96	
———————— . . . The patent in this case was taken for certain improvements in steam-engines, and in machinery for propelling vessels. The patentee claimed improvements in steam-engines, and also improvements in paddle-wheels. Proceedings were taken in Chancery to restrain the defendants from making and using paddle-wheels, according to the invention. For the defendants it was contended that there had been no infringement; their wheels caused the action of the float-boards to take the required angles by means of an excentric external of the wheel, whereas the plaintiff used a crank within the wheel: and much evidence was given to show, in opposition to the plaintiffs' case, that the plaintiffs' and defendants' wheels were different in principle and construction. It was also urged that the invention was not new, and that the specification was insufficient. His Honour doubted whether a jury might not say there was no infringement, in which case there would be great injustice done to the defendants if the injunction should be retained. His Honour directed that the plaintiffs should bring such action as they might be advised, and that the defendants should undertake to submit to such order as the Court might make in the event of a verdict in support of the infringement and the validity of the patent, and that the plaintiffs and witnesses should inspect the defendants' works.	107	

Names of Cases.	Reported Page.	Where reported in other works.
The case was subsequently tried in a court of law, the jury finding a verdict for the plaintiffs on the questions of infringement, on the novelty of the invention, and the sufficiency of the specification; but they found that the suggested improvements in steam-engines were not useful. On the question of infringement, his Lordship directed the jury "that the differences of the two machines, pointed out by defendants' witnesses, did not affect the principle of the plaintiffs' patent at all. The two machines are alike in principle, and the one who made the first invention of that suggested the principle of the other, though he may have carried it into effect by substituting one mechanical equivalent for another. You are to look to the substance, and not to the mere form. If in substance it is an infringement of it, you ought to find it so; but if you think that, in substance, it is not the same, if it was in principle really different, then you will find it not to be an infringement, though it might have a resemblance in its parts." In regard to the specification, his Lordship said,—The public, on the one side, have a right to the specification being fair and honest and open and sufficient; and, on the other hand, they should not be entrapped by captious objections to the specification, not going to the merits of it. That is the fair way of viewing it; and if you, in the result, shall think this has been so specified as that any engineer, having the ordinary knowledge which competent engineers ought to possess, would be able to make the inventions from specifications and drawings alone, then the specification is sufficient; but if, on the other hand, you think that competent engineers would have to set themselves a problem to solve, and be required to solve that problem, then it is not a good specification. . . . . If a patentee is acquainted with any particular mode by which his invention can be most conveniently carried into effect, he ought to state it. . . . . The defendants put in a model which would not work (and which they said was a copy of the drawing), because one of the parts of the drawing happened to be a little degree too small to enable it to work, if it had been a little larger it would have been able to work. Then a workman of ordinary skill, when he is told to make two		

Names of Cases.	Reported Page.	Where reported in other works.
things, and that they shall move, he would of course make them of sufficient size to move; that is, within the ordinary knowledge of every workman; if he finds a part too small, he knows, by making it a little larger, it will do. That is such a specification that a man of ordinary and competent skill would be enabled to make a machine by. The Court subsequently granted a rule, and the whole question was argued. The judgment of the Court, in respect to the question of novelty (the patentee having made wheels before the patent) was as follows:—The evidence was, that before the date of the patent (July 2, 1829). Curtis, an engineer, made for Morgan two pairs of wheels, upon the principle mentioned in the patent, at his own factory. Galloway, the patentee, gave instructions to Curtis, under an injunction of secrecy, because he was then about to take out a patent. The wheels were completed and put together at Curtis's factory, but not shown or exposed to the view of those who might happen to come there. After remaining a short time, the wheels were taken to pieces, packed up in cases, and shipped in the month of April, 1829, on board a vessel in the Thames, and sent for the use of the Venice and Trieste Company, of which Morgan was the Managing Director, and which carried on its transactions abroad, but had shareholders in England. Curtis deposed that the wheels were sold to the Company, and Morgan paid Curtis for them. Morgan and Galloway employed an attorney, who entered a caveat against the granting of any other patent on the 2d of March, and afterwards solicited the patent: the question is, whether this solitary transaction, without any gain being proved to us derived thereby to the patentee or to the plaintiff, be a use or exercise in England of the mode of construction in any sense which can be deemed a use by others, or a public use, within the meaning of the statute and the patent. We think not. It must be admitted, that if the patentee himself had, before his patent, constructed machines for sale as an article of commerce or gain to himself, and had been in the practice of selling them publicly to any one who would buy, the invention could not be new at the date of the patent. On the finding of the jury that the part of the patent relating to steam-		

Names of Cases.	Reported Page.	Where reported in other works.
engines was not useful, their Lordships said,—We cannot help seeing on the face of the patent, as set out in the record, that an improvement in steam-engines is suggested by the patentee, and is part of the consideration of the grant, and we must reluctantly hold, that the patent is void for the falsity of that suggestion. . . . It is a satisfaction to know, that this objection will not destroy the patent, as the objection is one which may be removed by the Attorney-General under the statute. . . . . We do not mean to intimate any doubt as to the validity of a patent for an entire machine, or a subject which is, taken altogether, useful, though a part or parts may be useless, always supposing that such patent contains no false suggestion.		
P.		
Parkin *v.* Harrison . . . . In an application for an injunction to restrain the plaintiffs putting down wood pavement, his Honour the Vice-Chancellor having doubts as to the sufficiency of the specification, the patent not being of long standing, and the infringement disputed, directed that an action should be brought to try the validity of the patent, and whether it had been infringed.	677	13 Rep. Arts, 4 S., 157.
Peach et al., Crofts *v.*	233	
Perring, *ex parte* . . . . This was an application on behalf of the plaintiff to the Court of King's Bench, for a mandamus commanding the Lords of the Treasury to settle the terms and prices on which His Majesty's service should be supplied. The patentee had not, according to the patent, supplied anything, but the Admiralty had made the patented invention for the supply of the service. The Court held, that this application could not be supported, as the patentee had supplied nothing.	234	4 A. and E., 949.
Perry et als. *v.* Skinner . . . . . . The action was brought after filing a disclaimer to part of the invention specified. The declaration alleged the infringement at and after the granting the letters patent; the pleas raised the ques-	403	New T. R., Part 14; 2 M. and W., 471; Webs. R., 250.

Names of Cases.	Reported Page.	Where reported in other works.
tion, whether any act of infringement could be proved with effect previous to the date of the disclaimer. It was contended, on the part of the plaintiffs, that the specification must be taken as if the specification had been originally as it stood after disclaimer, and that a person having, before the disclaimer, infringed parts not disclaimed, would be liable for such infringements. The Court held, that the statute must be read as if it had stated that a patent should be made valid by a disclaimer thenceforth, and it should not be so read as to make parties wrong-doers by relation.		
Pratt, Jupe *v.*	242	
Price et als., Crane *v.*	611	
Protheroe *v.* May . . . . In this case the patentees had granted exclusive licenses to different parties for different localities, including altogether England, Wales, and the town of Berwick-on-Tweed, and the number of exclusive licenses exceeded the number of twelve. The question was, whether the patent, which says that the patent shall not be assigned to or held in trust for more than twelve persons as partners, was thereby rendered void. The Court held, that a license is no interest in a patent, and that a patent is not rendered invalid by the grant of exclusive licenses to more than twelve persons, even though they all join together and include the whole of England, Wales, and the town of Berwick-on-Tweed.	531	5 M. and W., 675; Webs. R., 414; 13 Rep. Arts, 4 S., 102.
R.		
Roberts' Patent, *in re* . . . . . . This was an application to extend the term of letters patent for spinning machinery. It was shown that the patentee had met with great difficulty in bringing his invention into public use, owing to the workmen not liking machinery which tended to dispense with the necessity of skill in the spinners, the invention being for a self-acting mule. The patent had not made any return for seven years; in the last few years it had produced 5,000*l.* per annum. Their Lordships extended the term seven years.	521	Webs. R., 573.

Names of Cases.	Reported Page.	Where reported in other works.
Robson, Lukey *v.*	413	
S.		
Seaward et als., Morgan et al. *v.* . .	1	
Sharp's Patent, *in re* . . . . The patentee in this case enrolled a disclaimer and alteration to parts of his specification; and this was an application, *ex parte*, to the Master of the Rolls to take the same off the roll, by reason of the same being contrary to the statute. The Master of the Rolls said,—"If I were to decide that this memorandum was void, and so order it to be taken off the roll, and it turned out that it was not so, what situation would the patentee be in? I should be depriving him of his patent. I apprehend I have no discretion about receiving a memorandum when it has been sanctioned by the Attorney-General; and, therefore, how could I make an order which would have the effect of depriving a patentee of his rights under the Act altogether?"	461	Webs. R., 641; 12 Rep. Arts, 4 S., 168.
Skewes, Bickford et als. *v.*	449	
Skinner, Perry et als. *v.*	403	
Stafford's Patent, *in re* . . . . . . This was an application to have the term of letters patent granted for improvements in carriages extended; the patentee had received no benefit, and the Court recommended the term to be extended seven years.	516	Webs. R., 563.
Swaine's Patent, *in re* . . . . . . In this case, which was an application to get the term of letters patent for artificial mineral waters extended, their Lordships being of opinion that the invention was meritorious, and that the patentee had sustained loss, extended the term seven years.	515	Webs. R., 559.
W.		
Westhead *v.* Keene et als.	425	1 Beav., 309; 12 Rep. Arts, 4 S., 107.
———— . . . . This was an application to the Master	434	

Names of Cases.	Reported Page.	Where reported in other works.
of the Rolls for an injunction. The bill set out the grant of the letters patent, but not the specification, only parts thereof, stating that a specification had been duly enrolled. To this bill the defendants demurred, first, by reason of the title not being fully set out in the bill, and, secondly, by reason of parties having an interest in the patent being made defendants, so that the defendants (Keene and Co.) might first have to render an account to the present plaintiff, and afterwards to the other defendants, should they become plaintiffs. His Honour overruled the demurrer.		
Westrup and Gibbins' Patent, *in re* . This was an application, under the statute, to confirm letters patent. The specification claimed two means of condensing distilled sea water, one of which turned out to be old, having been published in books before the patent; and it was also shown to have been described in two patents taken many years before the petitioner's patent. Their Lordships held, that the statute could never have been intended to apply to such a case, and directed the opponent's costs to be paid by the petitioners.	219	Webs. R., 554; 5 Rep. Arts, 4 S., 227.
Wilby, Gillett et al. *v.*	540	
Williams et als., Abbott *v.*	381	
Wright's Patent, *in re* . . . . . . This was an application by petition, under the statute, to obtain an extension of letters patent granted in May, 1824, for certain combinations and improvements in machinery for making pins. The petition was by assignees, and was opposed by Messrs. Kirby and Co., for whom it was contended, that the invention was not new, by reason of previous patents. Their Lordships having heard the whole case, intimated that they should recommend an extension of the term. On the part of Messrs. Kirby it was then urged, that they, having helped the patentee and expended large sums of money for him to bring out the invention, ought to have a license for the use of the invention without any patent-	517	Webs. R., 561.

Names of Cases.	Reported Page.	Where reported in other works.
rent. And an application was also made on the part of the executors of Mr. Watnerby, formerly a partner of the assignees. Their Lordships stated, that they should recommend an extension of the patent in favour of those in whom the legal estate of the letters patent was vested at the time of the application, leaving to Messrs. Kirby and Co., and the administrators of Mr. Watnerby, any claim they might have at law or in equity, and that, under the particular circumstances of the case and the position of the parties, there would be no costs.		
Wright's Patent, *in re* . . . . . . This was an application to extend the term of letters patent under the statute. The patent was for apparatus for bleaching and cleansing linen and other fabrics. The Attorney-General called their Lordships' attention to the fact, that the invention had not got into general use, and it was for their Lordships to say whether that had been sufficiently accounted for. Their Lordships stated, that the reasons given for the invention not being in more general use were satisfactory, and recommended an extension of seven years.	519	Webs. R., 575.

LAW REPORTS

OF

PATENT CASES.

MORGAN AND ANOTHER *v.* SEAWARD AND OTHERS.

In the Court of Chancery, before the Vice-Chancellor (Sir L. Shadwell).—July 27, 1835.

An injunction had been obtained by the plaintiffs to restrain the defendants from using the mode of giving the required angle to the float-boards of paddle-wheels, and from any manner imitating or resembling the invention for which letters patent had been granted to Elijah Galloway, on the 2d day of July, 1829.* Application was now

---

* The specification was as follows :—

To all to whom these presents shall come, I, Elijah Galloway, of King-street, in the Borough of Southwark, Engineer, send greeting. Whereas His Most Excellent Majesty King George the Fourth, by his letters patent under the great seal of Great Britain, bearing date at Westminster the second day of July, in the tenth year of his reign, did for himself, his heirs, and successors, give and grant unto me the said Elijah Galloway, his especial licence that I, the said Elijah Galloway, my executors, administrators, and assigns, or such others as I, the said Elijah Galloway, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time, and at all times, during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the town of Berwick-upon-Tweed, and also in all His Majesty's colonies and plantations abroad, my invention of "Certain improvements in steam-engines and in machinery for propelling vessels; which improvements are applicable to other purposes." In which said letters patent there is contained a proviso obliging me, the said Elijah Galloway, by an instrument in writing, under my hand and seal, particularly to describe and ascertain the nature of my said invention, and in what manner the same is to be performed, and to cause the same to be enrolled in His Majesty's High Court of Chancery within six calendar months next, and imme-

Morgan et al

made by the defendants to dissolve the injunction. Many affidavits were produced on both sides; those on behalf

diately after the date of the said recited letters patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

Now know ye, that in compliance with the said proviso, I, the said Elijah Galloway, do hereby declare that the nature of my said invention consists—

First, in an improvement of the steam-engine, whereby I am enabled to obtain a rotatory motion from the alternating action of the axis of a piston, which piston makes about three-fourths of a revolution within the steam cylinder; and,

Secondly, in an improvement on paddle-wheels for propelling vessels, whereby the float-boards or paddles are made to enter and come out of the water in positions the best adapted (as far as experiments have determined the angle) for giving full effect to the power applied.

And in further compliance with the said proviso, I, the said Elijah Galloway, do hereby describe the manner in which my said invention is to be performed by the following description thereof, reference being had to the drawing hereunto annexed and to the figures and letters marked thereon; that is to say—

Description of the Drawing.

In the part marked Drawing A, Fig. 1, is an end view of a steam-engine, with my improvement applied; the piston of which performs about three-fourths of a revolution.

Fig. 2, shows a side view of the engine; and

Fig. 3, a cross section of the steam cylinder, showing the piston and the steam passages.

I will here observe that I only represent as much of the steam-engine in the drawing as is necessary for the purpose of explaining how my improvement is to be applied; and no particular description will be necessary of those parts, which are well known to engineers. In all the figures the same letters of reference indicate similar parts of the machinery, and the parts which constitute my improvement are tinted with blue and yellow. *a*, the crank, fixed on to the shaft, which carries the fly-wheel; *b*, the connecting rod, which is connected to the crank, *a*, by the pin, *c*, and to a lever, *d*, by the pin, *e*; which said lever, *d*, is fixed to the crank pin, *g*, by which the lever, *d*, receives its backward and forward motion by the alternating rotative motion of the axis, *f*, in the lever, *d*, is a mortice, *h*, into which mortice a bearing, *i*, is fitted, on which the lever, *d*, slides, and which is for the purpose of guiding the lever, *d*, and thereby causing the end, *e*, of the connecting-rod to perform the curve shown by the dotted red line. *j*, is a pin passing through the frame-work of the engine, the point of which enters into and supports the bearing, *i*, yet allowing it to turn and accommodate itself to the different positions which the lever, *d*, takes, in being moved by the axis of the piston.

Now it will be evident that if the piston be moved by the steam from *m*, to *n*, in the direction of the arrow in figure 3 (which motion is hereafter more particularly described), the end, *g*, of the lever, *d*, will be carried round to the position shown by the dotted red lines in figure 1,

v. Seaward et al.

of the plaintiffs pointing out the novelty and utility of the invention, and, at the same time, showing the distin-

which will be about three-fourths of a circle; and the crank, *a*, will, by the intervention of the connecting rod, *b*, have performed the revolution of about half a circle, as indicated by the dotted lines from *o*, to *p*; and the momentum obtained in the fly-wheel will carry it somewhat further; and the return stroke of the piston from *n*, to *m*, in figure 3, will cause the crank, *a*, to perform the remainder of the revolution from *p*, to *o*.

Although I have described the sliding lever, *d*, as having a mortice in it, and sliding on the bearing, *i*, it is evident that the same effect may be produced in various ways, for instance, instead of a mortice there may be a raised tenon formed on the lever, *d*, and a grooved piece substituted for the bearing, *i*; or there may be a friction roller in place of the bearing, *i*, or any other similar mechanical contrivance, my improvement consisting in obtaining a rotatory motion from the axis of a piston in a steam-engine (which piston makes somethiug less than a revolution in the cylinder) by means of a sliding lever, in the manner above described. The manner in which the motion is given to the piston is shown in figure 3. A cock (as shown at figure 5) is placed at *x*; the steam comes in at *w*, and passing round the cock and along the passage, *z*, enters the cylinder at *m*, and the piston is turned in the direction of the arrow towards *n*, the position of the cock being changed by the apparatus shown at x, in figure 2, (so that the aperture, *e*, shown in figure 3, as coinciding with 2, is made to coincide with 1,) the steam is admitted through the passage, *v*, and enters the cylinder at *n*, the waste steam in both cases escaping through *o*, *x*, *y* (see figures 3 and 5).

Fig. 4, represents another modification, where the sliding motion and the lever, *d*, are done away with, and the mechanism, *g*, *k*, *e*, substituted, a crank, (similar to that described as attached to the axis, *f*, in figures 1 and 2,) connected at *g*, with the mechanism, being made to perform about three-fourths of a revolution; and a radius, *j*, *k*, by vibrating upon the fixed pin at *j*, together cause the extremity, *e*, of the mechanism to describe the curve, shown by a dotted red line; which, motion, by means of a connecting rod attached at *e*, would produce a rotatory movement in the crank, *a*, in figures 1 and 2.

Having now described that part of my invention which relates to steam-engines, I will proceed to that which relates to paddle-wheels, or machinery for propelling vessels.

Description of that part of the Drawing marked Drawing B.

Fig. 1, represents a section of a paddle-wheel, constructed according to my improvement.

Fig. 2, an end view; and

Fig. 3, shows one of the side framings of the wheel.

The same letters of reference, indicating similar parts, in all the figures.

a, *b*, *c*, *d*, and *e*, the float-boards or paddles, which are affixed, by straps and screw bolts, or by any other suitable means, to bent stems, marked *f*, which stems are shown separately in figure 4. *g*, *h*, *i*, *j*, and *k*, are connecting rods, attached at one of their ends by pins or bolts, *r*, to the bent stems, *f*, of the float-boards; and the other ends of all these

Morgan et al.

guishing features of novelty claimed by the patentee, when contrasting the invention with those which had be-

rods, excepting *g*, are attached to the disc, A, by pins or bolts, S, as shown in figure 5. The disc, A, is made to revolve on the crank, B. C, is the framing; D, are the radiating arms of the wheel; *t*, are the axes (which carry the stems of the float-boards, and which connect the two sides of the framing of the wheel), shown separately with their screws and nuts, V, in figure 4; E 1, and E 2, are the naves or bosses, to which the radiating arms are fixed by screw bolts, or by any other suitable means. The crank, B, is represented separately at figure 6; and it will be seen that it is fixed in the outer bearing, F, and is prevented from turning therein by the adjusting screw, *x*, or by keys, or by both. The outer nave-plate or boss, E 2, figure 2, revolves round the part, *y*, figure 6, which forms its axis. G, is the shaft which communicates rotatory motion from the engine, and which shaft, G, is made fast to the inner nave-plate or boss, E 1, figure 2; and thus the wheel is made to revolve independent of the crank, the part, S, being merely a bearing, and not a fixture.

Now it will be evident from the above description that, on turning the wheel in the direction of the arrow, figure 1, the paddle or float-board, *d*, will be carried forward to nearly the position of *e*. It will be seen that the lever, *g*, is made fast to the disc, A, and does not turn on a pin, as is the case with the others; consequently, the advancing of *d*, to the position of *e*, will turn the disc, A, and with it the other levers, *h*, *i*, *j*, and *k*, which, together with the revolving of the wheel, will cause each of the paddles or float-boards successively to take the position shown by *d*, and all the other positions shown in the drawing. It is only necessary further to add, that the improvement in the steam-engine is applicable to engines for driving machinery on land and for raising water, as well as for marine purposes, and that the improvement in the paddle-wheel may be applied to undershot water-wheels, as well as for propelling vessels.

Now whereas I claim as my invention,

First, as regards my improvement in steam-engines, the obtaining of a rotatory motion from an alternate motion of the piston by means of the lever, *d*, the mortice, *h*, and the pin or bearing, *i*, or by means of the mechanism or combination of levers shown at figure 4; and,

Secondly, as regards my improvements on machinery for propelling vessels, the mode hereinbefore described of giving the required angle to the paddles by means of the rods, *g*, *h*, *i*, *j*, and *k*. The bent stems, marked *f*, the disc, A, and the crank, B, and such my improvements, being, to the best of my knowledge and belief, entirely new, and never before used within that part of His said Majesty's United Kingdom of Great Britain and Ireland called England, his said dominion of Wales, or Town of Berwick-upon-Tweed, nor in any of his said Majesty's colonies or plantations abroad, I do hereby declare this to be my specification of the same, and that I do verily believe that this my said specification doth comply in all respects fully, and without reserve or disguise, with the proviso in the said hereinbefore in part recited letters patent contained, wherefore I do hereby claim to maintain exclusive right and privilege to my said invention.—In witness, &c.

ELIJAH GALLOWAY.

v. Seaward et al.

fore been published by R. Buchanan, by J. Oldham, and by J. Udney.

The affidavits on the part of the defendants tended to show want of novelty of the invention of the patent, by reason of those previously published. They also endeavoured to show that the wheels of the defendants were not colourably different from the plaintiffs', but were materially improved, and that the plaintiffs' wheels, as specified, would be unsafe in use, by reason of the axle not running through the wheels.

Mr. Knight, *Mr. Jucobs*, and *Mr. G. Richards*, were for the plaintiffs, and *Mr. Solicitor-General (Rolfe)*, *Mr. David Pollock*, and *Mr. Parker* were for the defendants.

Mr. Solicitor-General stated that this was a motion to dissolve the injunction obtained by the plaintiffs, on the 27th of May last; and then, after briefly explaining the progressive improvements made in paddle-wheels of late years, the Learned Counsel said—The float-boards of common wheels are fixed radially, and produce a great deal of splash in the water, and have none of that motion which is called "feathering." The great object in paddle-wheels is to have the machinery so contrived as that the paddles shall enter and leave the water with as little violence as possible. The first improvements that were patented for this object was an invention by a person of the name of Buchanan, in 1813. All subsequent inventions have been merely modifications of Buchanan's principle. This principle is well known among mechanics; it is called an "eccentric movement," namely, by the motion of one wheel to obtain another to move on a different centre. The eccentric movement is acquired by the application of the eccentric movement to paddle-wheels. The paddle-wheel is fixed at a right angle, and the float-boards enter the water nearly perpendicular, without any splash, in the position in which it has the greatest power, being always perpendicular to the horizon. This invention of Buchanan was not found to answer very well, and many other inventions were from time to time made exactly with the same view. Galloway obtains the false centre by having an arm coming down from the true centre: he obtains his false centre precisely in the same way as that which has been described by Buchanan, by radii fixed on a disc which goes round the false centre, having at the ends of it cranks fixed, not communicating, as

Morgan et al v.

in Buchanan's to the paddle-wheel, but in a crooked way, notwithstanding which the principle is exactly the same. Now all the stems in Galloway's wheel, *h*, *i*, *j*, and *k*, are attached to the disc by means of pins, and are moveable, except one of them, *g*, which is entirely fixed. The reason for having *g*, fixed, is, that in turning the great wheel which communicates with the false centre, if it all depended upon the radii connected by pins, there would be a vibratory motion; something is wanted to completely and firmly catch hold; one is therefore fixed, and called the fixed stem. This patent was assigned to the plaintiffs. The wheels made by the plaintiffs, according to the patent, were found not to succeed at all; and shortly afterwards they were obliged completely to alter the form of their wheels. They retained the same principle; but there were two or three difficulties found to be almost insurmountable. One was, that the moment the elongated paddles on the bent arm came in contact with the rough sea, the wheels were crushed in pieces, because the pin, instead of being in the centre of the float-board, was at the extremity of it; the consequence of which was, that the machinery was very ricketty and unsafe, and it became necessary to brace them together at the top. It was further found that there was no use in the outer crank at all; the motion being communicated not by means of the axis, but by means of the wheel itself, from which braces go across to set the wheel in motion, the axis communicating with the crank, so as to form a false centre. They also found that this wheel was extremely insecure, by reason of the great stress on the float-boards: they, therefore, altered their plan altogether, and instead of having the stems communicating with the bent arms which communicated with the float-boards, they have stems much longer with no bent arms whatever connected with them, and which communicated with the centre instead of the side of the float-boards. The principle of this may be just the same as before, but it is a totally different thing from the float-boards and bent arms originally used. This is necessary to be observed, because it is evident that in many of the affidavits the witnesses speak of Morgan's present wheel, and not the one that was patented. Now the defendants only claim to do that which, in one form or the other, engineers have been in the habit of doing for the last twenty years. The defendants are engineers of the greatest re-

Seaward et al.

spectability, having in their employment between three and four hundred workmen, and have been in the habit of making paddle-wheels for a great number of years, to a great extent. Mr. Seaward happened to be making a tour in France in the year 1833, and in passing in the steamboat from Havre-de-Grace to Rouen, he was much struck with the paddle-wheel used in the boat; and, upon making inquiry, he found it had been in use in France ever since the year 1827, the invention, if it can be called an invention, having been made by a Monsieur Cavé; that was a wheel so far upon the principle of the plaintiffs', that it had the eccentric axis, which obtains the motion by means of stems fixed upon pivots, communicating a double motion to the paddle-floats. This wheel differed from Morgan's, in having none of the weakness arising from the cutting of the axis, the axis going entirely through from one side to the other: it more resembled Morgan's present wheel than that for which he obtained his patent. The eccentric motion was on the side of the outer centre, but the disc was on the outside, the same as Buchanan's. The elongation of the radii was exactly the same. You may vary the number and the proportion between the radii, but the principle must be exactly the same. This wheel had great simplicity and great strength: the principle of it was the same in substance as Buchanan's. If Cavé's wheel had been made in England immediately after the granting of Buchanan's patent, it might have been considered an infringement of that patent—the only difference between the two being that the centre of motion is much less eccentric than that of Buchanan's. Mr. Seaward considered this wheel an ingenious adaptation of the well known principle, and he determined when he came back to try and make one: the only improvement that occurred to him, was, that it would be better to have all the stems or rods connected with the disc by pins, and to make the affixed connexion with rods to the wheel, which makes that a different thing altogether; the fixed rod has nothing to do with the paddles. Accordingly the defendants set about making wheels upon this principle, and at the end of last year entered into a contract to supply a ship, that was to trade in the Mediterranean, called the Levant, with paddle-wheels made upon this principle. These wheels were made in a shop where there were about 350 people constantly at

Morgan et al v.

work, without the slightest attempt at concealment, nobody dreaming there was any impropriety in their so doing, because if they were a copy of anything heretofore in use, they were a copy of Cavé's (and he, of course, had no claim in this country); although Cavé's was not what may be called an invention, but merely a better adaptation of the mode of applying the eccentric motion. The defendants, however, received a letter from the plaintiff, William Morgan, stating they had heard they were making wheels upon their principle, and threatening them, unless they desisted, with legal proceedings. An arrangement was made between the plaintiffs and the defendants, that a scientific gentleman (Mr. Carpmael, of Lincoln's-inn) should inspect the model of the wheels defendants were making, and give his opinion whether or not they were an infringement of the plaintiffs' patent. In pursuance of which arrangement, Mr. Carpmael did attend at the defendants' manufactory at Limehouse, and, after inspecting the model, gave it as his opinion that it was an infringement of the plaintiffs' patent. Mr. Seaward laid the case before four engineers of eminence, and they gave an opinion contrary to that of Mr. Carpmael; and, acting upon their judgment, Messrs. Seaward proceeded to complete the contract they had entered into with the Levant Company, and they proceeded openly and notoriously up to the time the plaintiffs obtained the injunction. The manner in which that injunction was obtained was one of the most flagrant impositions ever practised upon a Court. Without the slightest communication with the defendants, they apply to the Court, on the 27th of May, stating that they had only shortly before, on the 10th of April, come to the knowledge that we were proceeding to manufacture these wheels. Independently of all other objections, even if this was the most flagrant violation of a patent right that could be conceived, the plaintiffs have put themselves out of Court; because if there is one principle more settled than another in a Court of Justice, it is this, that a party coming not merely for a *festinum remedium*, but that sort of remedy which comes under the definition of a word and a blow, are bound beyond all other persons to state the question fairly.

Mr. Knight.—The whole correspondence, and every scrap of paper, was before *Mr. Richards* when he prepared the bill and affidavits.

Seaward et al.

The Solicitor-General.—They came at the last moment, when they might have come in the month of December. These, then, are the general grounds upon which this injunction is sought to be dissolved. In the first place, the plaintiffs' patent right is perfectly worthless, it being a patent for a thing which was not only not new, but had been notoriously practised for years. The principle of the plaintiffs' invention is to have a cranked axis to obtain the false centre of motion, and certain connecting rods, one of which is fixed to the disc, revolving on that centre of motion, which are fastened to certain bent arms, which bent arms are fastened to the float-boards. Now what is understood by a new invention? A patent must be either for some entirely new machinery, or for the application of known machinery in some new manner: but in the plaintiffs' patent there is no new principle, or any new application of a known principle; the only novelty in the patent being in the bent centre, and the placing the eccentric movement in the hollow between the two sides of the wheel; all the rest was, not only well known, but patented in the year 1813. Buchanan's is exactly the same thing: there is the eccentric movement applied to elongate and contract the radii of the wheel, those radii being connected with the paddles.* The

---

* The patent was granted to Robertson Buchanan, on the 18th day of October, 1813. The specification was as follows:—

To all to whom these presents shall come, &c. Now know ye, that in compliance with the said proviso, I the said Robertson Buchanan do hereby declare that the nature of my said invention, and manner of performing the same, are particularly described and ascertained as follows; that is to say: In the first place my said invention is established upon a mathematical theorem, which may be enumerated in the words here underlined, namely: If two equal rings or circular lines in the same plane, or in planes parallel to each other, be conceived to revolve each upon its respective centre in its own plane, with one and the same uniform velocity, and in the same direction with regard to parts of the rings of lines alike situated, and any point be taken in one of the rings or lines, and a right line be drawn from that point parallel to a line supposed to join the centres, until it meets the other ring or circle, then I say the right line so drawn will be equal to the line of distance between the centres, and will continue equal and parallel to that line of distance during the whole of every revolution so made. And the demonstrative proof of the said theorem being very easily deducible by any person acquainted with the elementary principles of geometry, and not being needful to enable a workman to perform my said invention, I have not for those reasons considered it to be requisite that I should enlarge upon the same in this place.

Morgan et al. v.

wheel of the defendants have nothing in common with the plaintiffs' but the principle of the eccentric moving

Secondly, the circle, *a*, *c*, *e*, *g*, and the circle, 1, 2, 3, 4, in Fig. 1, denote the rings or circular lines before-mentioned, and Y, and X, denote the centres thereof; and the line 1 a parallel, and equal to X, Y, the line of distance of the centres will continue equal and parallel to that line of distance in the positions, 2 *c*, and 3 *e*, and 4 *g*, and in all other positions into which the point, 1, can be brought during the uniform, equal, and similarly-directed revolutions of the two circles.

Thirdly, if a wheel, which I shall here call the pitch wheel, be constructed, and here denoted by the circle, 1, 2, 3, 4, Fig. 1, having four or any other number of paddles, *a b*, *a c*, *f e*, *h g*, capable of being moved or shifted in position upon the respective axes or centres thereof, 1, 2, 3, 4, and the extremities of the said paddles, *a*, *c*, *e*, *g*, or any arms or connecting pieces equal in length to X, Y, be attached (under the conditions before set forth) to another wheel or revolving piece, which I shall here call the connexion wheel or piece, it will be a necessary consequence that if one of the said wheels be made to revolve, the other wheel will also revolve in the same direction and with the same velocity, and the paddles will continue parallel to X, Y, and to each other (excepting only in the case wherein the said cases or centres may be governed by arms or connecting pieces, and the paddles themselves be also capable of having their positions on the said axis or centres varied, and then each paddle will continue parallel to itself as it may have been so first posited); and fourthly, Fig. 2, numbers 1, 2, and 3, denote by views of the nature of two vertical sections, and one ground plan or section, the said pitch wheel and connexion wheel or piece fitted up and connected with the paddles; and in all the drawings, the same letters and figures indicate the same parts or things. B, denotes the axis or arbor of the pitch wheel, which wheel is or may be made double in order to support the axles of the paddles; and C, denotes a circular fixed piece which serves as an arbor for the connecting wheel or piece to revolve upon by its smooth and fitted socket; and the said circular piece is by the construction eccentric with regard to the pitch wheel, and sufficiently large to allow the arbor B, of the pitch wheel to pass through it without interfering with the motion of the connecting wheel or piece. And further, at A 1, A 2, A 3, and A 4, are seen the arms or connecting pieces always parallel to the line between the centres X, Y: but in such constructions of machinery as do not require the arbor B, or any arbor or axis for the pitch wheel to pass through, as here delineated, then instead of the piece C, may be substituted a simple pivot, or any other kind of centre, to govern the circular motion of the connecting circle or piece. And moreover, in such cases as may require that the position of all the paddles should be changed at the same time, with regard to surrounding fixed objects, by a motion equivalent to that of weathering or changing their obliquity, I do produce such and the said change by any well-known means of construction, by which the centre X, can be made adjustable in position around, and preserving constantly the same distance from the centre Y, and I do accordingly change the position of the said centre X, and thereby also the obliquity of the said paddles, by virtue or reason of the constant condition, that the arms A 1, A 2, A 3, and A 4, will continue parallel to the line X, Y, joining the centres

Seaward et al.

without the use of cogs, and that was in use in 1813, in Buchanan's patent; the only difference between that and

of the pitch wheel and connexion wheel, in what manner soever the said line X, Y, may at any time be placed. And I the said Robertson Buchanan do further declare, as to the practice of my said invention in the impelling of vessels, boats, barges, or rafts, I do fit up the same with one or more wheels, having paddles and other apparatus as before described, and do cause the pitch wheels to revolve by the action of steam or any other suitable first mover, and thereby to strike the paddles duly into and against the water, so as by the usual re-action to produce a progressive motion of and in the said vessels, boats, barges, or rafts; and I do fix or adjust the centre, X, in such manner, that the paddles shall have their surfaces of action perpendicular to that of the water, or nearly so; namely, with the upper borders or edges thereof inclined forward more or less by trial and observations, as the velocity through the water is greater or less, in order that the resistances from the immersion and delivery of the paddles may be the least, and the action from the direct impulse of the lower paddles may be the greatest possible. And, moreover, with regard to undershot wheels, I do adjust the paddles in the like manner, so that the loss of force by the first immersion and by the lifting of the tail water may be the least, and the direct impulse the greatest possible. And with regard to breast wheels, the floats must be set at such an obliquity as may best and most effectually subject them to the action of the water. And with regard to overshot or bucket wheels, I do substitute in the place of floats, certain shallow vessels or horizontal floats, with ledges on the upper side. And I do make one of the sides or ledges thereof to turn on pivots or otherwise, in order to discharge and empty the water at the lower situation of the revolving wheel, by means of a tripping piece there placed for that purpose, or by other fit means. And I do fill or charge the said vessels or horizontal floats with water, when at the upper part of the revolution, in the usual manner. And with regard to wind-mills with upright shafts, I do apply and use my said improvements, taking care that the floats or sails shall be opposed at right angles to the direction of the wind, when in that position where the radius of the pitch wheel is also in the place of the float, and also that a fit cover shall be applied to defend the floats or sails from the action of the wind in their returning semi-revolution. And the said last application and use of my said improvements will be equally effectual in mills, of which the principal shaft shall be horizontal or oblique instead of being vertical, provided that in all such cases the said shaft shall be itself at right angles to the direction of the wind. And farther, whensoever the strength of the wind or nature of the work, shall or may render it expedient to alter the obliquity or weathering of the floats or sails, the same may be done by altering the situation of the centre X; and if required, such alteration may be made during the actual work by means of the centrifugal apparatus, called the governor, or by any other well known and appropriate apparatus, operating by means of the velocity of the mill itself. And I do further declare, that the vessels or horizontal floats hereinbefore described as applicable to overshot mills, may also be applied to raise water by my said improvements, and in this case the pitch wheel must be moved by any fit first mover, and the buckets filled below and

Morgan et al. v.

plaintiffs' being, that plaintiffs' have the eccentric movement within the wheels, and Buchanan's outside; and in this respect the defendants have adopted Buchanan's principle. But Buchanan's is not the only one upon this principle. In the year 1827 a person of the name of Oldham obtained a patent: that is exactly the same, with the exception that the eccentric motion is obtained by means of cog-wheels instead of the means by which it is obtained in defendants' wheel. It may be said,—It is true that Oldham's was known, and Buchanan's was known, but the union of the two was not known; but that is not what he has done. In that same year, 1827, Cavé had invented his wheel, and he had a drawing made of it, but he did not apply for any patent for it. In the month of May, 1829, before the granting of the plaintiffs' patent, a gentleman of the name of Dr. Udney invented an improvement on Oldham's, and which is exactly the same for which the patent has been obtained, the only distinction being the plaintiffs having the false centre inside. A description of this of Dr. Udney's was published in the "Mechanic's Magazine," in the month of May, 1829. It has been suggested that the description does not state that the rods were connected by pins, but this was published in the "Mechanic's Magazine," and every mechanic would know it was so intended.

Mr. Knight.—It is a very material point, there being but one fixed rod, and all the rest moveable, in the plaintiffs' invention.

The Solicitor-General.—The paddles in Udney's are not fixed to bent stems; but neither are the defendants', nor those now made by Morgan. There is another circum-

---

emptied above by the method before described, or any other well known method. And the dredging from the bottom of waters may also be performed by scraping buckets attached to the wheels instead of the paddles aforesaid, and the said buckets, after having charged themselves by acting upon the ground at bottom, are discharged into an appropriate channel or conveyance near the top by the action of a metallic piece resembling a broad hoe, and placed there for that purpose. And lastly, with regard to other machinery, and the application of my said improvements, and also the variations of a structure and materials, and the relative position of the parts of my said improvements, the same may be easily understood and performed by any competent workman, from what hath been already specified, and do not therefore require any further elucidation or remark.

In witness whereof, &c. ROBERTSON BUCHANAN.

Seaward et al.

stance so important, that it is necessary to call attention to it, namely, that a workman of the name of King Williams, previous to the obtaining of the plaintiffs' patent, actually made the model of a wheel exactly on the same principle, the bent arms and every thing in the same way. King Williams says, that in the winter of the year 1828, he went into Germany, to Frankfort, and there became acquainted with a machine, an automaton, which it was intended should walk on the stage, and that this was done by a movement of this sort; and it struck him that the same principle might be applied to paddle-wheels; and before the granting of the plaintiffs' patent, as early as April, 1829, this very model was made, and exhibited to a variety of persons. But nobody dreamt of this model of King Williams being an important invention, because it was a most insecure thing, by reason of its being connected at the end and not in the centre, just as in the specification. It is said by the plaintiffs that King Williams did not learn this invention at Frankfort, but that he surreptitiously obtained it from a workman in the employ of the patentee. It is immaterial how he acquired the knowledge, the only question is the point of fact of his obtaining the knowledge and exhibiting the model. Then there is another wheel, Brown's, made in the year 1828, embracing the application of just the same principle, to give a feathering to the paddle-boards. Under these circumstances the defendants contend, first, that the invention is not new: for the same reason there is no infringement, because, if there was anything new, it must be the position of the false centre within the wheel, and that we have not. There is also the circumstance of the concealing from the Court what had taken place in the months of December or January, and not telling the whole truth when they applied for an *ex parte* injunction, and also that all title to the patent is out of the plaintiff, Morgan, by his bankruptcy. Under these circumstances, we conceive the defendants are entitled to have the injunction dissolved. It is a matter of the greatest importance to the defendants, they having entered into a contract with the Levant Company, which must be completed before the 1st of August. The plaintiffs and defendants are rival contractors for these sort of wheels with the same Company, and while the plaintiffs are going on supplying them with wheels, the defendants are prevented by the injunction: it may, therefore occasion

Morgan et al. v.

irreparable injury to the defendants. The scientific witnesses for the plaintiffs seem to be speaking of Morgan's present wheel, and not of the patented wheel; Mr. Brunel seems clearly to be speaking of that wheel. There is a discrepancy of opinion among the witnesses. Some say it is an infringement, others not: that is a question upon which the Court must form its own judgment. In order to constitute an infringement they must first establish the validity of their patent, and that it would not have been a violation of Buchanan's patent, if it had been made while that patent lasted; and, secondly, that in some material point the defendants have infringed it by using the exact wheel used by Cavé, that of Oldham's and Udney's, and also the model of the wheel exhibited by King Williams. The injunction, therefore, obtained by the plaintiffs must clearly be dissolved.

Mr. David Pollock and *Mr. Parker* followed on the same side. The latter gentleman read the affidavits in support of the motion, and *Mr. Richards* those for the plaintiffs.

Mr. Knight.—Sir, I have the honour of appearing for the plaintiffs in this case, in which, as I conceive, as the case now stands, the only substantial question is, what ought to be done until the case can be tried. The subject of the patent in dispute is one of great value and importance; this is admitted, no one has attempted to dispute it; and the only question is, what shall be done until the matter can be tried at law, where if the defendants' choose to try it, they have the right to have it tried. I shall therefore apply myself to this question of what ought to be done in the meantime.

The Vice-Chancellor.—I suppose that both sides would not shrink from trying the matter at law?

Mr. Knight.—I am ready to try it in any way your Honour may think most fit, the only question being, as I before observed, what is to be done until a trial can be had. Now this point has been regulated by the Court upon fixed principles, which are well known, and upon which no doubt whatever exists; the rule I refer to was laid down in the case of *Hill v. Thompson.** In *Lord Eldon's* judgment in that case, he states what I have always understood to be the principle that applies to the particular question, what is to be done until the case can

---

* Vol. i. p. 374.

Seaward et al.

be tried at law? which, I say, is fixed by certain known rules. "The principle," *Lord Eldon* says, "upon which the Court acts in cases of this description is the following:—Where a patent has been granted, and an exclusive possession of some duration under it, the Court will interpose its injunction, without putting the party previously to establish the validity of his patent by an action at law. But where the patent is but of yesterday, and, upon application being made for an injunction, it is endeavoured to be shewn in opposition to it, that there is no good specification, or, otherwise, that the patent ought not to have been granted, the Court will not from its own notions respecting the matter in dispute, act upon the presumed validity or invalidity of the patent, without the right having been ascertained by a previous trial; but will send the patentee to law, and oblige him to establish the validity of his patent in a Court of Law, before it will grant him the benefit of an injunction." Now these are the principles upon which the Court has uniformly acted; it presumes in favour of the title of the patent, even where there is reasonable matter of doubt or question, upon the ground of the granting of the patent having been followed by continued possession and enjoyment. It is the right, therefore, of the plaintiffs in this suit to have the law upon the subject, as it is sustained by decisions and practice, administered to them, according to these known and established rules.

Now I beg your Honour's attention particularly to this circumstance, there is not a single case in evidence of any competition with the plaintiffs in this their exclusive right; not a single case, I say, brought into Court,—that this exclusive right of the plaintiffs has in any respect been interfered with during that period, from the month of December, 1829, to the present time; not the least pretence for stating it. And I must entreat your Honour's attention while I am upon this part of the subject to the place where the defendants, Messrs. Seaward, carry on their trade—upon the banks of the Thames—down which, from the year 1829, vessels, having the improvements, have been in use, on the part of the Government and others, constantly from that year, 1829. Now your Honour is aware, that during one part of the proceedings in this case, my Learned Friend, *Mr. Parker*, has had the gallantry to come forward in defence of King Williams.

Morgan et al v

The Vice-Chancellor.—I really don't believe a word of what King Williams has stated: certainly I shall not give you any trouble on that part of the case. We will throw his evidence entirely out of the question.

Mr. Knight.—No, Sir; but the case is worse—far worse—with respect to this King Williams, than your Honour is yet aware of. It is clear that the other side have brought forward that evidence of King Williams with the knowledge of the fraud. It is proved to have been a fraud practised by those who brought forward this evidence. Now with reference to the circumstance of Cavé's wheels, I entreat your Honour's attention to the statement of Mr. Seaward, the story about his voyage on the river Seine, between Havre and Rouen, in the Louis-Phillippe. Now Mr. Seaward is a man in a large business, conversant with mechanical subjects, always hearing what is going on in the world in his own particular profession, in which profession such an improvement as this could not have existed without its being the subject of universal conversation among mechanics, and men engaged in Mr. Seaward's business; living also on the banks of the Thames, and seeing from day to day wheels with this improvement passing by; this gentleman, Mr. Seaward, comes to your Honour, and tells your Honour, and asks your Honour, as a reasonable being, to believe that he discovered this invention, for the first time, in a boat called the Louis-Phillippe, between Havre and Rouen, in the year 1833. Why it would be an insult to the dullest and most unobservant man to suggest such a thing. I am quite astonished how, under the able advice that Mr. Seaward has, the parties should have ventured to bring forward such a statement. Does your Honour suppose that this patent, having been in existence from the year 1829, having been continually spoken of, having been used by the Government in their vessels, which must have frequently passed Messrs. Seaward's manufactory, does your Honour suppose that Mr. Seaward could have remained ignorant of it? Now, on looking at Mr. Seaward's affidavit (part of which *Mr. Knight* read), the idea that he means to convey, is, that this combination of the one fixed rod and the others moveable was given him by the discovery on board of this steam-vessel. Your Honour may take it for granted, and I will prove it, that except this vessel on the Seine, which this gentleman states he saw in 1833,

Seaward et al.

there is not a trace in the evidence of any wheel with the parts belonging to this having been in use in this country; clearly not: and it is quite immaterial what may have taken place in France. I only allude to this story of Mr. Seaward's now for the purpose of showing the impossibility of paying attention to affidavits of such a description as these. Then with respect to this supposed model of Dr. Udney's: this model, in fact, is not Udney's; they have made a variation in the model from the description given of Udney's wheel in the "Mechanics' Magazine;" and as it commonly happens in cases of this kind, the variation is on the principle of our patent, and might just as well have belonged to any other. Now with regard to Buchanan's patent, the rods are all fixed, and the paddles at all times parallel. It is admitted, that, whatever may be the case with the paddle when it enters the water, it is not enabled to leave the water at a proper angle; and therefore leaves out the whole of the material part of the plaintiffs' invention. As to Oldham's wheel, it differs in a slight degree from that of Buchanan's. Now that circumstance has been distinctly brought forward, and is no where contradicted. Park, in his second affidavit, draws the distinction to which I have alluded. He says, that "in John Oldham's invention, there are two wheels, with floats affixed to vibrating spindles fastened to levers or cranks in the same manner as is set forth in the said specification of the said Robertson Buchanan, but with this only difference and addition, that the said wheels are not of equal size, and the eccentric axis, instead of being a fixture, as in the said Robertson Buchanan's invention, is made to revolve at the same time with the eccentric or connecting-wheel, which turns on it; and these are both caused to rotate by means of cog-wheels carried on a separate shaft, which is placed parallel to the main-shaft. And this deponent further saith, that any and every angle which circumstances may require, either for the entrances of the floats into, or their departure from, the water, cannot be alike obtained in every wheel of whatsoever diameter it may be, by the combination of the said John Oldham, in which the angles of the floats at the water-line necessarily depend on the diameter of the wheel; whereas, in the said plaintiffs' wheel, any desired useful angle may be obtained in every wheel, of whatsoever diameter it may be." The distinguishing merit for which

Morgan et al. v

the plaintiffs' patent was granted, is this, that you not only gain the required angle that is best when the float-boards enter and leave the water, but also that it is capable of application to any wheel of whatsoever diameter. Buchanan's is admitted not to be within the first description: Oldham's is proved to be not within the second.

The Vice-Chancellor.—Just set Oldham's model here.

Mr. Knight.—There is no difference of opinion on that point; there are plenty of affidavits on the subject.

The Vice-Chancellor.—Your proposition is, that any angle cannot be had in every wheel, of whatsoever diameter, from Oldham's principle: what is the reason of that? I don't see how it can be so.

Mr. Knight.—Mr. Carpmael will explain that to your Honour: he has made a diagram for the purpose of shewing it more clearly. But there is no difference of opinion about it anywhere.

The Solicitor General.—I cannot conceive the meaning of it: is there any peculiarity in the size of the wheel?

The Vice-Chancellor.—I don't think this proposition is met by any of the affidavits.

Mr. Knight.—It is not, Sir; and, therefore, I have not addressed myself at such length as I otherwise should have done.

Mr. Carpmael explained the models to his Honour, and said,—I have taken the diameters of two wheels, one of fifty and one of a hundred equal parts, and it would do for any diameter you may require. There can only be one angle for each diameter; and the angle of entry and of leaving the water, must, in Oldham's wheel, depend on the diameter; the angle being a line drawn from the centre of the upper float-board to the circumference of the wheel at the water-line.

The Solicitor-General.—Do you mean to say that Oldham's wheel cannot make any angle you please?

Mr. Carpmael.—Yes, Sir.

The Solicitor-General.—Then I am not mechanic enough to understand it, nor the gentlemen who have instructed me either.

Mr. Knight.—If there had been any contradiction of evidence upon that point, I should have entered into it.

The Solicitor-General.—Which affidavit is that in?

Seaward et al.

Mr. Knight.—It is in Park's, of the 9th of July, and Brunel's also.

[Mr. Carpmael proceeded; and his Honour remarked that he clearly saw that each diameter of a wheel, on Oldham's plan, could have but one angle, and that the same angle could not be produced in wheels of different diameters.]

Mr. Knight.—Your Honour may take it as a fact established in the case, about which there is no dispute, that, according to Oldham's principle, the required angle cannot be obtained to wheels of any diameter. I purposely omitted the explanation of the mechanical principle myself, because I knew there was a gentleman present infinitely more capable of doing it than I am; and I was afraid if I attempted it I might confuse it. The affidavit, Sir, to which I am more particularly desirous of referring your Honour's attention upon this point is that of Alexander Park. Now I come to Dr. Udney's wheel, which I really believe we have already disposed of; but Park's affidavit goes on to say, after having described Buchanan's and Oldham's, "That in the description of the invention of the said J. Udney, there is a revolving collar on a fixed axis placed eccentrically to the main shaft, but that it could not, at the time of the publication of the same, have been inferred that Udney contemplated the use of rods connected or attached, by pin-joints at their upper end, to the collar, so that they might rotate freely on the crank; but, on the contrary, the engraving annexed to the said description of the said J. Udney's invention, for the purpose of shewing how the rods were to be connected to the collars, distinctly shews the rods and collar to form one piece or be firmly united, the said rods being represented as springing from the collar, and then, for a short distance, as gradually lessening, and, afterwards, as continued in a straight form. And this deponent further saith, that, in the letter-press, or description given by the said J. Udney of his said invention, he does not in any one passage thereof (as is stated in the said affidavits of the said William Brunton and John Isaac Hawkins, Bryan Donkin and John Donkin, that he does) mention or hint that the said rods are moveable on the collar, but in every instance wherein he mentions the said rods, he speaks of them as departing or playing from the crank." Now I

Morgan et al. v.

entreat your Honour's attention to this circumstance, that every one of the scientific witnesses who have spoken upon this subject, confirm what this witness has here said. They have all stated, that those gentlemen, Mr. Brunton, Mr. Hawkins, and the two Mr. Donkins have been induced to swear, under this misapprehension, affidavits leading to the inference that in this invention of Udney's the rods were moveable on the collar. Now that is distinctly and pointedly contradicted. And it is also said, that Udney's drawing, as published in the Mechanic's Magazine, did not furnish the means of making any useful machinery. Now upon this part of the evidence there is no contradiction.

The Solicitor-General.—I beg your pardon. You state they are not made moveable; why here they are made moveable. These are all different angles in different positions: they must move in order to effect that.

Mr. Knight.—All I mean to say is this; that these witnesses state distinctly, that the rods are not moveable on the collar: that Udney, in his description, "does not," as this witness says, "mention or hint that the said rods are moveable on the collar, but in every instance wherein he mentions the said rods, he speaks of them as departing or playing from the crank."

The Solicitor-General.—I think your Honour has got the plate; your Honour will perceive there that all the rods from the point, *b*, are at different angles; it is necessary that they should be so in order to its moving; otherwise the wheel could not move at all.

The Vice-Chancellor.—If you will just look at that drawing: take the radius of the circle, the black line which is upon the right; you see that the small line, *b*, *f*, *e*, below it, is not in the same position in regard to the main line above it.

Mr. Knight.—Now, Sir, what the witnesses say, with respect to the possibility of making a machine capable of being usefully applied from Udney's drawing is, as I have before stated, totally uncontradicted. So much for the wheels of Buchanan, Oldham, and Udney. I have shewn your Honour that in Buchanan's wheel the rods are fixed, and that although the wheel may enter the water at the proper angle, it cannot leave the water at the proper angle; Buchanan's must be entirely set aside. That in Oldham's the required angle cannot be ob-

Seaward et al.

tained to wheels of any diameter, as is the case with the plaintiffs'; and that in Udney's the rods are fixed to the collar, and that it is incapable of being applied to any useful purpose. Then, lastly, there is the French model, which, of course, has no bearing whatever upon the question, even if you were to suppose that Mr. Seaward's affidavit upon the subject is perfectly correct. Now, Sir, I have gone through these models of Buchanan's, Oldham's, Udney's, and Cavé's, about which so much has been said on the other side, and I say that they all bear out my proposition, that up to the time when this patent was granted in 1829, and up to the time when the Messrs. Seaward invaded it, with the single exception, if indeed it be an exception, of what is alleged to have taken place in Yorkshire, there has been no invasion of this particular patent: and, without any exception, there has been no invasion of it known. Now, Sir, the utility and importance of this improvement have been proved by so many affidavits, that it is a matter plainly beyond dispute: and the only point remaining, except with regard to the law upon this subject, on which, if your Honour requires that I should address you before I sit down, I shall willingly do so; the only point is, the supposed variation in the combination of the defendants' wheel from that of the plaintiffs'; the variation in the means by which they are worked. Now your Honour perceives that the object of the present invention is distinctly declared to be the obtaining the requisite angle; the best angle at which the wheel should enter the water and leave the water: "It consists," as the inventor says, "in an improvement on paddle-wheels for propelling vessels, whereby the float-boards or paddles are made to enter and come out of the water;" your Honour observes, "enter and come out of the water,"—"in positions the best adapted, as far as experiments have determined at the angle for giving full effect to the power applied." Now that is the declared object of the invention or improvement. Now he goes on to describe the manner in which that is effected: he says, "Description of the drawing: fig. 1, represents the section of a paddle-wheel, constructed according to my improvement; fig. 2, an end view; the same letters of reference indicating similar parts in all the figures: *a*, *b*, *c*, *d*, and *e*, the float-boards and paddles, which are affixed by straps and screw-bolts, or by any other suitable

Morgan et al. 2

means, to bent stems, marked *f*, of the float-boards, and the other ends of all these rods, except *g*, are attached to the disc, A, by pins or bolts, S, as shewn in fig. 5. The disc, A, is made to revolve on the crank, B. Now it will be evident, from the above description, that on turning the wheel in the direction of the arrow, fig. 1, the paddle or float-board, *d*, will be carried forward to nearly the position of *e*; it will be seen that the lever, *g*, is made fast to the disc, A, and does not turn on a pin, as is the case with the others; consequently, the advancing of *d*, to the position of *e*, will turn the disc, A, and with it the other levers, *h*, *i*, *j*, and *k*, which together with the revolving of the wheel, will cause each of the paddles or float-boards successively to take the position shewn by *d*, and all the other positions shewn in the drawing. Now whereas I claim as my invention, as regards my improvements in machinery for propelling vessels, the mode hereinbefore described of giving the required angle to the paddles by means of the rods, *g*, *h*, *i*, *j*, and *k*, the bent stems marked *f*, the disc, A, and the crank B." Such is the description of the inventor given in the specification of his invention. Now if your Honour will have the goodness to look back a little, you will see that this expression has been made use of by the inventor, which I will read again: "Now it will be evident from the above description, that on turning the wheel in the direction of the arrow, fig. 1, the paddle or float-board, *d*, will be carried forward to nearly the position of *e*; it will be seen that the lever, *g*, is made fast to the disc, A, and does not turn on a pin, as is the case with the others; consequently, the advancing of *d*, to the position of *e*, will turn the disc, A, and with it the other levers, *h*, *i*, *j*, and *k*, which, together with the revolving of the wheel, will cause each of the paddles or float-boards successively to take the position shewn by *d*, and all the other positions shewn in the drawing." The specification, therefore, plainly shews upon what material the object of the combination turns. The effect of the combination, if I may use the expression, is obtained merely by having one of the rods fixed, by which you get the governing power, and the others moveable, which that fixed rod prevents from creating inconvenience, whilst the fixed rod, acting for one purpose as well as the other, does at once govern the movement and obtain the required angle. Now that,

Seaward et al.

I say, never was done before; it clearly never was done before: and upon that there is no conflict of evidence at all. The specification itself, the drawings, and the model, plainly shew how this was done. Now that is not proved by Mr. Seaward to have existed any where in this country previous to 1829; it existed no where. Well, then, if the specification be right, and there be novelty in the patent, there can be no doubt that the plaintiff is entitled to have this injunction continued; our long enjoyment having been completely established by these affidavits. A great deal has been said by the other side upon the substituted axis for the crank in this machine of the defendants being different from ours. The truth is, that the difference consists in a mere word. The invention cannot exist, the improvement cannot exist, without the crank in one place or other. Now I say you cannot get the eccentric without the crank. I beg particularly to call your Honour's attention to this, because it is important to this part of the case; you cannot get an eccentric without a crank; because you must have two different axes; and whether you have a crank or elbow formed by the piece which stands out of the disc, or passing through the disc in a different manner, it is exactly the same thing. You must have that which is in the nature of a crank. Now this model will explain to your Honour very clearly what I mean. Here is a crank in both these places; in the one it is buried, in the other not; but directly you move them to the point you still have the crank; that is, you have the elbow. And the truth is, that the word crank, applied in this description, I apprehend, means an eccentric action. I will shew your Honour that this object is effected in their machine with the elbow, and that it is only differently applied by reason of the different position of the parts. The whole of the matter comes to this, that they have employed the different parts of our machine in a different position. The effect of varying those parts has been, that they may get the effect of the crank in a different place: they don't want the crank where it is now, but in place of it they have an elbow, which is the eccentric axis, without which they cannot work. We have adopted this mode of shewing it, in consequence of the position of our machine in the paddles. They have made a corresponding part at the end, and, by using the main-shaft in a different way, they effect the

Morgan et al.

object of the crank, although it is differently placed, precisely and perfectly in the same way. If your Honour will look at this exhibition of the two, and the manner in which they work, you will see what I mean perfectly. The one is an exhibition of ours fixed in the middle, and the other is an exhibition of theirs fixed at the side. They do not, and they cannot, dispense with the crank. When once you shift the position, you must change one of the cranks. You must have a crank somewhere. Now can it be doubted for a moment that this is a mere colourable evasion? It cannot be. I have stated the object of the plaintiffs' invention to be, to give the float-boards of the paddle the best possible angle, both at entering the water and leaving the water: we effect this by placing that part of the machine which your Honour has before you, in the middle; and to do this it is necessary to have a crank in the position in which your Honour now sees it: they fix it to the side, and the crank, therefore, can have no place in the position in which we have set it, but must be placed, in fact, in the other part of the machine. Your Honour will see that as plainly as possible, if you will look at the eccentric in this one [shewing another model]. They have, therefore, taken that by which the improvement is mainly effected. My statement upon what your Honour has got before you, is this, that they have got in their wheel that which I call the elbow; they have got that by which the improvement mainly works; that which is the most ingenious part of it; that to which all the rest is subservient, and without which the rest of the combination cannot work. They take the principal part, I say; in fact, they take that which is the only new part in the whole combination; that by which the whole works, namely, the one fixed rod, *g*, acting in combination with the rest, which are moveable, the fixed rod, *g*, governing the whole. Now with respect to the meaning of the word eccentric: we actually find, that, in the specification of Oldham's patent, the eccentric axis is actually called in that patent a crank.

The Solicitor-General.—Is that verified? I do not think it is.

Mr. Knight.—No; we did not consider it necessary that it should be so. We could soon get it verified, if there is any necessity for it.

Seward et al.

The Vice-Chancellor.—I have never thought it necessary that books should be verified; unless it was suggested that this was printed this morning, or any thing of that kind. These are things that are always in common use.

Mr. Knight.—This specification of Oldham's patent shews that an eccentric and a crank mean substantially the same thing. Crank means an elbow; and you cannot get an eccentric-action without. I am willing to discuss the matter with them upon the phraseology of the thing. I say they mean the same thing: crank means an elbow, and so does the eccentric. Your Honour observes, that in our affidavits we have spoken very minutely on the mechanical points: now they have got a great many affidavits, and among them the affidavits of several mechanical men, who all describe, in mere general terms, that the invention of the plaintiffs, and the wheel of the defendants are not substantially the same thing; but there is not one of them that condescends to particularize. Look at their many affidavits, and your Honour will see, that, from first to last, they contain a mere general statement that the two inventions are substantially different; but they don't state particularly wherein they are different: they content themselves with these generalities, and don't attempt to meet us upon particulars. They do not state the mechanical principles, as Mr. Brunel and others have stated them, in plain clear language, such as persons ignorant and unskilled in mechanics, as I am, can readily understand.

The Solicitor-General.—What is the paper you are going to read?

Mr. Knight.—It is part of my argument; but I have written it down, that I may not be misunderstood. It is merely a paper of my own.

The Solicitor-General.—Oh, I beg pardon.

Mr. Knight.—Mr. Carpmael tells me that the same letters are on the model that your Honour has now before you, that are in the specification.

The Vice-Chancellor.—Yes, I have taken them down; I have it all right here.

Mr. Knight.—Our model is the one nearest to your Honour. Our combination, in fact, consists of five parts; though the other side have chosen to call it only four; because they have chosen to put all the parts together,

Morgan et al. v.

without distinguishing them. Now, Sir, the first part of our combination, to which I wish to call your Honour's attention, is, the shaft in our model; this shaft is made to pass through the outer centre of the wheel.

The Vice-Chancellor.—B, is what is called, in the specification, the crank; is it not so?

Mr. Knight.—B, is so. I will read it through in the order in which the parts occur. A, is what we call the axis, which is made to pass through the outer centre of the wheel, and, necessarily, immediately opposite to the main shaft, and in a straight line with it. Now this shaft is firmly fixed in or to the outside frame-beam of the paddle-box (as in this model of ours), sometimes called the spring-beam, which is supported by the paddle-beams running out, as your Honour observes, from the side of the vessel. This shaft, which forms the outer bearing of the wheel, is then bent between or inside the frames of the wheels, so as to form a fixed cylindrical axis, and the whole termed, in the specification, the crank, B. Now your Honour observes, that if we had not specified that crank, then the specification would have been obscure, it would have been unintelligible. That is the means by which the eccentric is obtained. Now that is the description of our crank, and with your Honour's permission, I will now go through the corresponding part in theirs. They fasten a cylinder of metal to the side of the vessel, which forms the inner side of the paddle-box. The main shaft is passed through a hole bored or cast in the metal cylinder, near the circumference of the cylinder.

The Vice-Chancellor.—By the main shaft you mean the axis marked G, in the specification?

Mr. Knight.—Yes, Sir, it is marked G, in the plaintiffs'. The main shaft is passed through a hole bored or cast in the metal cylinder, near the circumference of the cylinder, and (in order to obtain the same angles) at precisely the same distance from the centre of the cylinder, as that between the plaintiffs' fixed shaft and the centre of their axis, B, which they have made of a smaller cylinder. This metal cylinder, therefore, thus becomes a large fixed cylindrical eccentric axis outside the wheel, in substitution for the plaintiffs' axis, B, inside the wheel, and the change in its form is the necessary consequence of the change in its position; it results merely from a

Seaward et al

different position of the various parts. We say that that is as great a fraud as was ever attempted to be practised. There is no useful purpose whatever answered by this change of position; all they have done is to create a considerable inconvenience: the wheel will not work as well under their arrangement of the parts as it will under ours. But still they have got the principle of the invention: they have got that which was the object of the combination of the plaintiff: their alteration is for the purpose of a mere delusive evasion of the plaintiffs' patent. I have shewn your Honour that the defendants' have taken one part of our combination; I shall now pass on to consider the next. Now A, is a collar or coupling, which we call in the specification the disc, A. Now this collar or coupling is placed on the eccentric axis, B, and is intended to revolve on it.

The Vice-Chancellor.—Let me see, the disc in yours is marked A?

Mr. Knight.—It is, Sir.

The Vice-Chancellor.—Yes, I see now; go on.

Mr. Knight.—The collar or coupling, which we call the disc, A, is placed on the eccentric axis, B, and is intended to revolve on it, and make one revolution during each revolution of the main shaft, to which the wheel itself is firmly bolted, and with which it revolves. Now that is the same as in ours; I beg your Honour's attention again to the corresponding part in theirs. Now they have a collar or coupling much thinner than that of the plaintiffs', and not resembling a disc, though performing the same functions, and is intended to revolve in exactly the same manner, and for the same purpose as the plaintiffs' thicker collar or disc, A. Does your Honour see what I mean in this part of my description? I am so dull about it myself, that I am obliged to dwell longer in my descriptions to your Honour than I could wish.

The Vice-Chancellor.—Yes, I see what you mean; it is perfectly clear as you have stated it.

Mr. Knight.—Now, Sir, *g*, is an arm or lever radial to the eccentric axis, called in the specification the rod or lever, *g*; that is our fixed rod, our governing rod; and allow me to say again that that is one distinct part of our combination. This arm or lever is firmly fixed at one of its ends in the collar or disc, and being connected at its other end by a working joint to a lever (called in the

Morgan et al. vs.

specification a bent stem) which vibrates on a fixed part of the framing of the wheel, drags the collar once round as often as the wheel revolves. That is the third part of our combination, the arm or lever. Well now for their third part which corresponds with this of ours. They have also an arm or lever radial to the eccentric axis, but rather shorter than the rod, *g*. At one of its ends it is firmly fixed to the collar or coupling, A, and at its other end connected by a working-joint to a lever or link, whose other end vibrates on a fixed bolt, forming part of the frame of the wheel; therefore this arm thus drags the collar once round as often as the wheel revolves. The point of difference here is merely this, that the defendants' require an extra lever or arm in their combination beyond what the plaintiffs' require in their combination, that is all the difference between their No. 3 and our No. 3. Now then for our No. 4. We have guide-rods, *h*, *i*, *j*, and *k*, to direct or guide the float-boards, and in part to give the required angles to them. These guide-rods are connected by means of a working-joint at one end of each guide-rod to the collar or disc, A; they are also connected by means of a similar working-joint at the other end of each rod, to bent levers, called in the specification bent stems, which bear the floats or paddle-boards. Now for their No. 4. They have guide-rods similar in all respects to ours, they are similarly connected to bent levers which carry the floats or paddle-boards. These guide-rods are on exactly the same principle; they perform precisely the same functions in both cases.

The Vice-Chancellor.—There is one distinction strikes me that you have not noticed, and it is this: that your corresponding fixed arm, *g*, is itself made to work the paddle; now their corresponding rod to your rod, *g*, does not work the paddle at all.

Mr. Knight.—No, Sir; but they have the axis here.

The Vice-Chancellor.—You see what I mean; the effect of your rod, *g*, is, apparently, to operate in a manner different to theirs; it does not, as yours does, govern the paddles.

Mr. Knight.—No, Sir; ours performs on a paddle; theirs does not perform on a paddle. We say that the purpose of our combination is to make that *g*, do double work. It is also the governing-rod: there is nothing in their mode of doing it that we might not readily

Seaward et al.

have adopted, had there been any advantage in it; because, all that we should have to do, would have been to make another rod, as they have done; but, as your Honour sees, our manner of combination is much more simple. Well, Sir, I now come to No. 5. The defendants pretend to say we use but four parts; they did not distinguish, or did not choose to distinguish, between the governing-rod, *g*, which was numbered as the third point in my description, and the guide-rods, No. 4, which direct the float-boards. No. 5, is the bent levers or bell-cranks, called in the specification bent stems, *f*; they carry the paddle-boards and vibrate on the cross spindles of the frames of the wheels, which cross spindles are fixtures in, or form part of, the frames. That is our No. 5; our bent levers or bent stems. Well, now, their No. 5, is this: bent levers, corresponding with the bent stems of the specification, are made to vibrate on the cross spindles of the frames of the wheels, which cross spindles are fixtures in, or rather form parts of, the frames. That is their No. 5, which is just the same as ours. I have now gone through every part of the plaintiffs' invention, and shewn the corresponding parts of the defendants' combination: and your Honour will perceive that the defendants have taken every part of the plaintiffs' patent, merely altering the position of the various parts, for the purpose of colourable evasion. The difference in appearance entirely results from the change in the different position of the machinery. I apprehend, that supposing the plaintiffs' patent to be good, and the specification to be good, that this combination of the defendants, which I have now gone through in detail, and shewn its exact correspondence with the patent, I say, I apprehend no man can for a moment doubt its being an infringement of the plaintiffs' patent, and that the alterations which have been made are merely for the purpose of a colourable variation. New and useful our patent is distinctly proved to be; and if this point be established beyond all question, then I say no man looking at these two machines, can doubt that the one is an infringement of the other. In Mr. Brunel's affidavit—I shall pass over the other affidavits—

The Solicitor-General.—Which of his affidavits?

Mr. Knight.—I think it is the one filed upon the 9th of July.

Morgan et al. v.

The Vice-Chancellor.—Do you mean the affidavit sworn upon the 20th of May, in which he goes particularly through the parts of the machine?

Mr. Knight.—It is Mr. Brunel's first affidavit; I shall trouble your Honour by reading a part of that affidavit: "That from the circumstances hereinbefore set forth, such change in position in the eccentric wheels so fitted to the Levant steamer of the combined parts or mode claimed by the said specification, is, in this deponent's belief, only a colourable expedient to evade the said patent, as in other respects the character of the combination o. the various parts is the same as that described in the said specification (that is to say) the bent stems, *f*, are attached to the connecting-rods, *h*, *i*, *j*, and *k*, by the pins, *r*. The connecting-rods are attached to the coupling or ring A, by the pins, *s*, as set forth in the said specification; the connecting-rod, *g*, is permanently fixed to the coupling or ring, A, which coupling or ring revolves eccentrically to the main shaft, the coupling or ring, A, being in substance and effect the same as the disc or coupling, A, described in the said specification, and the connecting-rod, *g*, is coupled by a link, to the framing of the wheel, and, therefore, draws round the coupling or ring A, consequently, the rods, *h*, *i*, *j*, and *k*; and the rod or lever, *g*, owing to their manner of combination, perform equally, in both cases, the same functions, and are the necessary means for giving to the paddles the required action, or any angle that may be considered most suitable." Because the defendants in this case have taken every thing which is new, and useful, and material, in this invention,—every thing which is essential in this combination,—and which, beyond all question, did not exist in this country before the plaintiffs' patent, will your Honour suffer them to continue in possession of what rightfully belongs exclusively to us, unless you have clear and strong evidence of the want of novelty in our patent, or of the defectiveness of our specification, neither of which your Honour has now before you?

The Vice-Chancellor.—I have heard nothing which induces me to consider the specification as defective. I dismiss, of course, what is said of the required angle. The real question in my mind is, whether, substantially and in truth, the eccentric and the crank are the same thing.

Mr. Knight.—We contend that it is, your Honour.

Seaward et al

The Vice-Chancellor.—I will just state, at present, the two things appear to be different at the first aspect, for this reason,—that the collar is in fact a cylindrical wheel of very small comparative thickness with regard to the axis upon which it moves; but in your case the crank is a small axis. But now it is clear to me, that if that action was reversed, and if, instead of having the axis so small in yours, the axis was increased in size, so as to come very nearly to the circumference of the crank, and that then the outer ring or disc was supported so as to move round the external ring, it is the same thing. Well, then, supposing the axis were to be increased, it would then be the same thing; this disc would then become a collar. That appears to me now to be the distinction between the disc and the collar. Your disc, being thick in proportion to your axis, does to the eye seem different to their collar, which is of very small thickness in comparison with the axis upon which it revolves.

Mr. Knight.—No doubt, Sir, it does to the eye appear different; but, in point of fact, such is not really the case. They have had several scientific men who have sworn on their side; has any one of those scientific men stated in what the difference consists, in this or any other particular, between the two machines? There are the affidavits of seven or eight scientific men brought forward by them; and they have all stated in general terms that the two things were materially different; but there is not one of them that enters into particulars, and condescends to state wherein the difference between the two consists. Now, on the contrary, all our witnesses distinctly swear, not only that the invention of the plaintiffs and the combination of the defendants are the same thing, but they also shew in what respect the two combinations are exactly the same thing.

The Vice-Chancellor.—By the crank you mean the projecting piece: taking it in that sense, the crank and the axis on which the disc moves, is the same as their eccentric.

Mr. Knight.—Yes, it amounts to that; the difference between the two is rendered necessary by their changing the position of the parts. As I said before, one crank is buried and the other is not; but the crank is essential to each.

Morgan et al v

The Vice-Chancellor.—Just so; I see what you mean.

Mr. Knight.—Now I admit, that, at first sight, to the eye there is a difference: and you must investigate the machinery,—you must do more than merely have an outside view of it,—before you can see the exact identity of the two things.

The Vice-Chancellor.—Is there not this circumstance, *Mr. Knight,*—the difference in our notions of the word crank? The bend upon the axis you call a crank. Now the question will be, whether the collar upon the eccentric is a crank and a disc. Is there any bend upon the axis in the defendants' wheel?

Mr. Knight.—Not to the eye, but they have it in reality; they cannot do without it.

The Vice-Chancellor.—Now what does the English word "crank" mean?

Mr. Knight.—It means an elbow, a turn.

The Vice-Chancellor.—Yes, certainly, a turn.

The Solicitor-General.—The dissimilitude between the disc and the collar is not a point upon which I rested; I merely pointed out the dissimilarity.

Mr. Knight.—The bend is essential to the eccentric; you cannot get the eccentric without the bend; there must be a bend or departure from the centre of the main shaft or axis, if I may use the expression, before you can get the result. There is no question whether the same effect is produced by the one as by the other. What we call the crank is rendered unnecessary in theirs by the change in position, but they have the same thing though in a different form. They have also the fixed rod as well as the moveable rods, and their fixed rods and moveable rods arrive at the same result as ours, although in their fixed rod, as in their crank, there is a change of parts.

The Vice-Chancellor.—It certainly does appear to me that the main question is, are the instruments which are combined together by the defendants the instruments which are combined together by the plaintiffs? or, in other words, whether attending to the fabrication of the crank and disc in the plaintiffs' machine, and the meaning of the term crank, the eccentric and the collar can fairly be called the same?

Mr. Knight.—I think they are; I think your Honour must admit that the elbow is obtained.

Seaward et al.

The Vice-Chancellor.—Yes, I admit that.

Mr. Knight.—Then if the elbow is obtained, the crank is an elbow, therefore they have the crank; crank means elbow and nothing else. The argument on their side would assume that the crank is something different to theirs; but that is not the fact.

The Vice-Chancellor.—The term crank is always relative to something else.

Mr. Knight.—This would be relative to something else. The term crank assumes that you must have an axis formed, or a thing for the purpose of applying it. It is applied in the specification; for after all it comes round to what I was upon, when your Honour said you had no doubt about the specification.

The Vice-Chancellor.—O yes, I think it cannot turn upon the specification.

Mr. Knight.—Your Honour admits that they have that which is equivalent to the crank; that is not disputed; they could not produce their result without an equivalent.

The Vice-Chancellor.—It really appears to me, that, after all the argument in the world, we must recur back again to the point at which we set out. It is quite clear that this matter must be decided at law; there is no doubt of that.

Mr. Knight.—Yes, Sir, that is true; but the question is, what is to be done in the meantime until it be tried at law.

Mr. Jacob and *Mr. Richards* followed on the same side.

The Vice-Chancellor.—This case has been argued with great ingenuity and with great labour, from the beginning to the end. Setting aside what I call the mere offsets of the case, observations on conduct, and other things, which do not at present appear to me to be material for consideration, the whole thing has been reduced at last to this simple question, namely, whether the production of this eccentric, merely for the purpose of regulating the paddles, is produced by the same combination of machinery in the defendants' engine, as that used in the plaintiffs' engine. Now, the inventor has in his specification mentioned four pieces of machinery; the rods, the bent stems, the disc, and the crank. But it appears to me, that inasmuch as he has thought proper, in

Morgan et al. v.

specifying the four instruments which are to produce the combination for which he has taken out his patent, to specify the term "crank," in my mind it is impossible to look at the question between the plaintiffs and the defendants, without seeing that you must determine this: whether an eccentric with a collar is the same thing in substance as a crank and a disc. But I take it that, from the very nature of the term "crank," it is a relative term, and that it must have reference to some other piece of machinery. Now, it is plain how it is in the plaintiffs'; the crank itself is, strictly speaking, a crank; in the model I have before me, it is what I may call a double crank, because there is a crank from each portion of that thing which represents the axis, and the axis of the disc is supported by two cranks, one on each side. In one of the wheels which have been produced, the crank was a projection from a thing which corresponded with the axis which was suited to the other beam of the framework; and at the end of the crank there was a fixed axis, upon which the disc was made to revolve. In either of the cases it was a crank. In this particular model which I have before me, it is, if I may use the expression, a double crank. Now, it does appear to me to be a most important variation, that instead of having the effect of making a double crank, the weakening of the axis, which I take to be the infallible consequence of constructing a double crank upon the axis—instead of weakening the axis, the axis is preserved entire, unbroken, and unincumbered, and you have no crank, that is, nothing which projects from the axis of the main shaft; but you have, in fact, the axis itself passing through the eccentric, and then the collar revolving upon the eccentric. It does appear to me that there is this most important thing gained; these things, I should rather say: in the first place, the unbroken strength of the axis for the main wheel; and, in the next place, the avoidance of that perpetual vibration upon the outward part or any part of the frame-work which separates the wheel: and you gain the transfer of the vibratory, and what I would call the destroying power, from the operation of the machinery, which, by reason of its being the weakest, is least able to support it, to that place where the vibration can produce no material effect; because, if it affects anything, it affects the side of the vessel, which is made suitably strong for the purpose.

Seaward et al.

And though I am willing to admit that the mere lateral action, the uni-lateral action of the bent stems by means of the eccentric and the collar upon the paddles, may tend, in some measure, to distress the paddles and to distract them, yet you must set one evil against the other; and if it is a question about the improvement or not, whether colourable or not, it will be a question for the jury to consider, whether on the whole there is an improvement or not. But I cannot myself feel inclined to the impression, that that alteration which has been made by the defendants is not merely colourable, but that it is one which, *prima facie*, may be considered an improvement; and an improvement, not by means of the combination of the instruments which the inventor has combined together in his specification, but by the introduction into the combination of three of them, of that thing which is not intended or dreamt of in his specification. I cannot myself but think, therefore, that this is as proper a case to be sent to be tried, both upon the question of fact and of colourable invasion, and upon the question of law that may arise upon the patent, as any question which was ever sent for the consideration of that which the law of the land has established as the proper tribunal for deciding such questions. Well, then, the next question that arises is a question peculiarly confined to the consideration of this Court, namely, what shall immediately be done. Now, it is possible that the jury may find that this is no infringement; and if that be the case, and I continue the injunction, where is the justice that can make a compensation to the defendants? There is no power by which this Court ever makes a plaintiff give the defendant damages, by reason of having continued the injunction longer than it ought to have been. So that in that way of putting the case—in that view, the defendants will have suffered a wrong, and the plaintiffs have gained an advantage to which they have no right. But take it the other way, that the jury find that it is an infraction, now what is the damage which the plaintiffs are likely to suffer? Why, that their engines might be applied by the defendants, and a profit raised; and so far as they would make a competition in the market with their own wheels, there might be a degree of damage. But the Court of Chancery has a jurisdiction over the wrong-doer when he

Morgan et al. 14

stands in the situation of a defendant. And I apprehend, that with respect to that which is really the main thing, namely, the completion of the present contract, and the entering into similar contracts, there is complete security that full justice will be done to the plaintiffs in the event of the jury finding for them, by taking an account, which it appears to me will be an extremely simple account to take, and which there is no reason to suppose, as *Mr. Richards* does, that the defendants will be so astute and clever as to escape from it. The sale of vessels must be a matter of some notoriety; it cannot be transacted, like a secret sale, in a corner, with an unknown correspondent; the thing of itself has notoriety attached to it, and that notoriety, it appears to me, will secure to the plaintiffs what they may be justly entitled to. Now, therefore, it does appear to me, that the proper order to be made will be this: that the plaintiffs shall forthwith bring such action as they may be advised. I want the truth of the case to be discovered. Let the plaintiffs, or either of them, be at liberty to bring such action as they may be advised; and let the injunction be dissolved, the defendants undertaking to submit to such order as the Court shall make respecting the profits of the present contract which they have made, and respecting any future contracts or any future sale or disposition of machinery which they may make, reserving the consideration of costs.

Mr. Knight.—We must have an opportunity, which I wish to take in the manner most agreeable to the defendants, of inspecting, by our scientific witnesses, at times to be mentioned, the works that are now in progress.

The Vice-Chancellor.—Yes, certainly, upon the principle of *Russell* v. *Cowley et als.**

Mr. Knight.—We are to be at liberty, at times and in manner to be arranged between the parties, and if not, to be prescribed by the Court, for ourselves and our scientific witnesses to inspect the works of the defendants.

---

* Vol. i., page 531.

Seaward et al

MORGAN AND ANOTHER *v.* SEAWARD AND OTHERS.

In the Court of Exchequer, Guildhall, before Mr. Baron Alderson and a Special Jury.—June 30, 1836.

Sir F. Pollock, *Sir W. Follett*, and *Mr. Butt*, for the plaintiffs; and *Mr. Attorney-General* (Campbell), *Mr. Alexander*, and *Mr. Jervis*, for the defendants.

The declaration was in the usual form, and the defendants pleaded, first, not guilty; secondly, that the patentee (Galloway) did not, by an instrument in writing, particularly describe and ascertain the nature of the said invention; thirdly, that the said invention was not an improvement in steam-engines; fourthly, that the said invention was not an improvement in machinery for propelling vessels; fifthly, that the said invention was not, at the time of granting the said letters patent, new, and that the patentee (Galloway) was not the first and true inventor thereof; and, sixthly, that the said invention was and is of no use to the public.

On these pleas issue was joined, and the defendants made the following objections to the patent:—That the specification did not show whether the patentee claimed in respect of a new combination of things previously known or the separate parts described; that no particular angles or dimensions or proportions were given, and no directions by which a required angle, or any particular angle, could be produced; that there were many mechanical objections to the mode described; that all wheels made according to the specification failed, and those now made by plaintiffs were substantively different from those described in the specification; that the said improvements in steam-engines were applicable, if at all, to but one sort of steam-engines, and the description given was insufficient.

Mr. Butt opened the pleadings.

Sir F. Pollock.—May it please your Lordship:—Gentlemen of the jury: the plaintiffs in this case are the licensee and assignee of the interest in a patent that was granted in the month of July, 1829, to the inventor, Elijah Galloway. The defendants are connected with the making of machinery for steam-vessels; and it is alleged that they have

Morgan et al. v

pirated this invention. The two important questions which you will have to try are, first, whether the invention is new and useful; and, secondly, whether the defendants have pirated any part of the invention claimed under the patent. There are some questions which have been raised, the object of which is to get rid of the patent by objections to something which neither the plaintiffs nor the defendants have anything to do with, the invention of the plaintiffs being for certain improvements, chiefly in paddle-wheels, and also in something relating to steam-engines. The defendants allege, that the invention relating to the steam-engine is not new or useful, though it is a matter that they have nothing to do with; and it is only raised in the present cause for the purpose of getting rid of the patent. Now, gentlemen, I shall proceed to state the nature of the invention. You are all aware of the extreme importance of steam navigation. Railroads have within the last few months occupied a great deal of public attention, but still nobody has forgotten, in the mania for railroads, the extreme importance of steam navigation. A vessel, generally speaking, is propelled by means of two engines, about the centre of the vessel, turning the paddle-wheel on the sides. The common construction of the paddle-wheel, I take it for granted, you are perfectly familiar with; I shall, therefore, at once pass to a matter which has very much occupied the attention of engineers, namely, to give to the floats of the paddle-wheel such a motion as shall not only not impede the vessel, but shall give to the force of the steam-engines the greatest possible effect in propelling it. Any person at all acquainted with the action of the wheels and of the floats must be aware, that when it goes down into the water, in order to strike the water for the purpose of propelling the vessel, there is a certain position with reference to the water which would be more advantageous than any other; and probably every one of you, who may have been on board a steam-vessel, may remember a certain degree of jarring which takes place, which is very much owing to the float when it strikes the water not being precisely in the proper position to produce smoothness of action. When the float is at the lowest point in the water, it acts immediately at right angles to the course of the boat, and it produces the greatest effect, but again when it comes up and is about

Seaward et al.

to leave the water, there is an inconvenience experienced, and there is a certain degree of what is called back water, which arises from the position of the float being always a radius from the centre of the wheel; the object of the plaintiffs' invention is to correct this. Now, gentlemen, if the float can be made to revolve, and, instead of rigidly going round with the wheels, if the paddle could be made to have a movement, either by revolving on its own axis, or by vibrating backwards, so as to adapt itself to the current and to the course of the vessel, great advantage would be obtained; you would avoid the shake on its entering the water; you would avoid the lifting the water on its quitting the water, and you would prevent anything like what is called the backward effect. The invention, perhaps, may be better explained by the skeleton instrument,* which, I think, with a little explanation, will put his Lordship and you in possession of what is the effect of the invention, and the manner in which it is carried into effect. The wheel, you are to take it generally, is the wheel at the side of the vessel; in order that the parts of it may be distinctly understood, there are only three floats in this model, if you observe, instead of going straight round as ordinary paddles do, preserving continually the same line, and corresponding with the radius of the circle in which they move, they in this wheel are constantly changing their positions; if you watch the progress of this float, the mode of its entering the water and leaving it will readily be seen. [The Learned Gentleman fully explained the working of the invention by the working of the model.] Assuming that these positions of entering and quitting the water are convenient and useful (and about which there is no doubt), I will next call your attention to the manner in which this is brought about. The object is to give a movement to the paddles, so as not to make it continuously straight out in the line of the radius, but sometimes on one side and sometimes on the other, and at other times (especially when it is down at the lowest point) straight out as in the common way. It is done by two wheels, one of them is the common wheel revolving in the ordinary way, and driven by the main shaft of the steam-engine; the other is made to play on an eccentric. The radii of the wheel,

---

* An instrument showing the skeleton of a wheel in the character of a working diagram.

Morgan et al. v.

as opposed to the eccentric, are three stiff rods, at the extremity of which are the paddles, with a joint capable of moving, and not rigid, as they are in the common case. The eccentric wheel has three arms, which are connected with three arms also, that come from the back of the paddle, and by their playing together they produce the alternate movement of the paddles, so that at the lowest point the paddle is in the position where it will have the greatest impetus, and quits the water at the proper angle, and comes round to the other side, so as to enter the water again at the required angle. Without stopping to investigate the mathematical problem how this is brought about, I will point out the principle of the invention. The three legs of the wheel are stiff, the paddles at the extremity of the legs, or radii or spokes of the wheel, turn, and are capable of vibrating.*

Mr. Baron Alderson.—They are the thighs and legs of the wheel.

Sir F. Pollock.—Just so, my Lord, that is, of the eccentric wheel; one rod is perfectly stiff, it moves round the eccentric, and always retains a radial position, but the other two rods play, and by their combined action they produce the result required, which, when considered, is perhaps a very simple mode, though one requiring mechanical skill to invent and to apply to this purpose. The principle, therefore, of the plaintiffs' invention is this, that there shall be a wheel, with its radii of course stiff, for the purpose of acting on the water, the paddles at the end of the radii are capable of being acted on by certain rods, which are themselves also connected with an eccentric axis, and of these rods one is fixed, it never changes its position in reference to the eccentric; all the others are moveable at each extremity, and in that way the effect I have described is produced. That, gentlemen, is the principle of the plan and invention; and I undertake to say with perfect confidence, that before this invention, nothing in any degree approaching to it in point of principle, was ever presented to the public, and I undertake to prove to your entire satisfaction, that nothing can be more plain and obvious than that the defendants' mode of producing the same effect is identical, and I had almost said, identical in its details. Now, gentlemen, I will read

---

* The Learned Gentleman continued to speak in reference to the skeleton diagram, which had but three float-boards.

Seaward et al.

to you just so much of the specification as applies to this subject, that you may see that the account I have given of it corresponds with the formal statement, which is put on the records of the Court of Chancery as the patentees' specification. "Now know ye, &c., I, the said E. Galloway, do hereby declare, that the nature of my said invention consists, First, in an improvement of the steam-engine, whereby I am enabled to obtain a rotatory motion from the alternating action of the axis of a piston." That relates to the engine, of the infringement of which we do not complain, but the defendants are throwing that in to create a difficulty in our way; I shall get rid of that presently. "And Secondly: (now this is the point in the present cause) in an improvement on paddle-wheels, for propelling vessels, whereby the float-boards or paddles are made to enter and come out of the water in positions the best adapted (as far as experiments have determined the angle) for giving full effect to the power applied." You see that is the general description of what the invention is, that the floats shall "enter and come out of the water in positions the best adapted (as far as experiments have determined the angle) for giving full effect to the power applied." Then he describes the steam-engine, with which I will not now trouble you. The principle of the invention is this, that there shall be a general wheel revolving with the paddles, capable of a movement round its axis, that an eccentric movement shall control the vibration of the float-boards, and that it shall be effected by means of connecting links, uniting the eccentric with the principal wheel,—that one of the connecting rods shall be fixed, and that all the others shall be moveable at both ends, and that its working shall produce the results, so that all of them shall move with a vibration perfectly uniform.

Mr. Baron Alderson.—One reason is, that the fixed rod is fixed to the centre of the eccentric,—the others have different centres which change their positions.

Sir F. Pollock.—Exactly; that is the spirit and principle of the invention. Now one of the objections which are made to the specification is, that we have not told precisely the angle which is to be used on certain occasions. No, gentlemen, we have not, and I will give the reason, which I think you will appreciate probably immediately;—I am sure his Lordship will, and of which I am

Morgan et al. v.

quite sure, before the cause is over, you will see the advantage. The float-boards can be made with very little alteration of the eccentric, in such a manner as to vary the angle, and you may make a wheel of any size enter the water at any angle called for. You will ask, what is the use of that? Why, it is this; a vessel may be intended to go with very great velocity, or it may be intended to go very slowly, and the same angles will not be adapted to a very rapid motion that are applicable to a very slow motion. To express the matter in the shortest terms, which his Lordship will instantly understand, the position of the paddle-wheels should always be, not the radius of the circle which is actually revolving, but it should always be a tangent to a cycloidal curve generated by rotatory motion of the wheel and the horizontal motion to the axle or to the vessel. If you are going very rapidly you will have a very flattened cycloid,—if you are going slowly you will have a more curved cycloid; in the one case the wheel ought to enter at one angle, in the other case at a different angle, so that the circumstance of this being variable, or capable of being varied, is of considerable utility and importance. Now, gentlemen, I will state to you what are the previous inventions which are supposed to make this neither new nor useful. The model I have here is the invention of a person of the name of Buchanan. I believe it has only four floats, in reality this machine when made had only four floats. It is done by two wheels, one of which is the wheel of the vessel turning round and producing the action; the other is an eccentric wheel producing a movement of the four paddles; but the movement is produced by four connecting cranks, so that the two which revolve round together are both of the same size, and being connected with these cranks, the floats are made to preserve the same position on all occasions, that is, they are always vertical and parallel to each other. The paddles, therefore, enter the water perpendicularly, they continue to be perpendicular through their whole course, they are undoubtedly in the best position when they are at the bottom, they rise out vertical, and they remain vertical above, so that they continue always, as it may be described, parallel to themselves. It is quite obvious that that is not the best mode, because when a paddle of this sort enters the water, instead of immediately coming into

Seaward et al.

full action, it rather creates some impediment,—there is much backwater. It is quite obvious, also, that this is not the invention of the plaintiffs, for neither has any one of the paddles the movements which the plaintiffs' paddles have, nor is the movement such as is brought about the same, there is no one fixed and other moveable rod, like that which I pointed out in the plaintiffs' wheel. In this all the cranks are the same, they perform the same movement, they produce the same result to each, and the paddles keep their position perfectly the same. I think some considerable use has been made of this in discussion of this matter elsewhere, but I think I may dismiss it by saying, that the result is different, and that the effect is brought about by quite a different process.

Mr. Baron Alderson.—That is, if there was an anterior invention on the same principle, the present invention would not be new.

Sir F. Pollock.—When this was discovered, and found not to answer, it was suggested that a different result would be produced by making the paddles, instead of keeping always parallel to themselves, so as always to retain the same position; it was supposed that by a little playing of the wheels, one within the other, they might be made to rotate, and turn completely round. Accordingly a wheel was made on that fashion, which I believe goes by the name of *Oldham's* invention. Now in this the float at the bottom is right across the stream,—so far that is right; the float as it comes up varies, until when it is at the top, the float is then horizontal; when it goes down to the bottom again, it is vertical, and again when it comes up it is horizontal. You will therefore see that these floats perform a rotatory motion, and not the vibratory motion which is performed by the plaintiffs'. Whatever occurs to one of these occurs to the rest, that all of them rotate round an axis; they neither produce the same effect,—they neither move in the same manner, nor is the motion brought about by the same means as the patent, and I defy any gentleman, who unites experience, intelligence, veracity, and acquaintance with the subject, to contradict those positions; the action is not the same, it is not brought about by the same means, nor is the result of it the same with the invention of the plaintiffs. Gentlemen, the action is not the same; every one of these floats continue to move round and round,

Morgan et al. v.

whereas the plaintiffs' floats vibrate,—they move backwards and forwards, but never turn round; the means by which the action is brought about are not the same. Oldham's is not done precisely in the same way that Buchanan's is done, by a series of cranks uniting the eccentric circle with the other, neither is it like the plaintiffs', there is no fixed rod like *g*, nor is there any such apparatus, as the members which play into each other, nor is the effect the same; the float-boards are not capable of accommodating their angles,—their angles must depend on the diameter of the wheel, and no two diameters can give the same angle, so that the effect is not the same,—the motion is not the same,—nor is it brought about by the same means. (A model of the plaintiffs' wheel, with the different parts lettered, similar to those on the drawings attached to the specification, was then handed to the Judge and jury.)

Mr. Baron Alderson.—What are the objections to this specification?

Sir F. Pollock.—I will state them presently.

Mr. Baron Alderson.—Of course you know?

Sir F. Pollock.—The objections to the specification are only general; the defence is founded upon this, that this invention corresponds with something that has gone before, and therefore is not new.

Mr. Baron Alderson.—I am aware of that; the objections to the specification you have had notice of.

Sir F. Pollock.—Yes, we have had notice of them; there is no objection to the specification in point of form, except one which I have adverted to, that we have not mentioned the precise angle.

The Attorney-General.—It neither gives the precise angle, nor the means of ascertaining it.

Sir F. Pollock.—My answer to that has been already, that the angle entirely depends on the velocity that you intend to use; in the drawing we give an angle, which is the angle that would be most ordinarily used, and it is an advantage in the construction of the machine, that it is capable of being altered and adapted to a much greater degree of velocity, or a slower. I have only one other instance to put to you of an invention before the plaintiffs', from which we have been supposed to borrow. This is the model of Poole's invention; in this there is a large groove in each side of the vessel, in which pins affixed to

Seaward et al.

the floats work; this groove, being eccentric to the main shaft, causes the floats to leave the water at a different angle to that at which they entered. Those are all the matters which we have to struggle with, with respect to inventions which have taken place before the plaintiffs' was presented to the public. Now I will call your Lordship's attention to another matter; after the plaintiffs' paddle had been in use some time, it was thought desirable if the arm, instead of applying the power at the extremity, could be applied somewhere in the body of the paddle itself; and this was done several years ago before the defendants came into the market, and you will find that this precisely coincides with the principle as shown in the specification; the only variation in the arrangement being, that the arm goes into the middle, instead of coming to the end, and then, of course, the axis on which it turns is at the centre, instead of being at the extremity. If the defendants had introduced that as a new improvement, they could not have obtained a patent for it. Gentlemen, this is the manner in which the plaintiffs had for years been in the habit of constructing their paddle-wheels; and it began (of course you may imagine an invention of this description is not likely in the course of a few months either to be understood, or to become generally and practically useful) a few years ago to be appreciated,—it had begun to be used; and then the defendants come in, and seek to claim the benefit of it by what, I say, is a direct and palpable infringement. Gentlemen, I am reminded that something has been said about cross pieces which go from one side of the wheel to the other, and, I believe, they are called trusses, the object of them is to give greater strength to the machinery, they form no part of the invention, and may be done without, but are now introduced to give greater steadiness and strength. Now, gentlemen, I will call your attention to the defendants' wheel. In principle it is precisely the same as the plaintiffs', this is their centre wheel; these are the floats that are capable of vibrating on their axes, there is the eccentric, and the arm, *g*, is a fixture, and all the others are moveable; the different parts communicate just as the plaintiffs' wheel does, so as to produce the same result; and when the specification is read, if one of you will have the kindness to take the plaintiffs' model, which is marked, and another will take the defendants' model,

Morgan et al. v

which is also marked with the same letters, you will find that they are identical; they correspond in the parts, thus showing that this is precisely the same invention to that, for which Galloway obtained his patent. Now, gentlemen, for the purpose of illustrating the connexion of the two, and their identity, here is a model, where both the plaintiffs' and defendants' are actually working upon the same floats, they go on quietly together, work on the same floats, producing very much the same motion. You will see that the parts entirely correspond in principle. Gentlemen, further to illustrate it, I have a model where they are both in action, and where all the floats are in two parts, so as to show you how they work side by side, one of them turning one set of floats, and the other turning the others; and the identity of the two parts of the machine will be immediately apparent. In the evidence of one of the witnesses, you will have a slight alteration made by unpinning one of these, and making a communication with another part, and then the two inventions are not merely precisely similar in principle, similar in detail, similar in their effect and results, but they then become actually identical. I will not pause to do it, but one of the witnesses will present this fact to your attention, and I think his Lordship will remember the manner in which the identity of the invention, with reference to the chair, was proved;* it was distinctly shown, that, by the slightest alteration, the defendants' was convertible into the plaintiffs'. This is infinitely more striking even than that instance, for by the slightest alteration, which by and by you will see, that which was before manifestly similar,—that which before was clearly resulting from similar details,—becomes identical, not similar, but the very thing itself. I am anxious to hasten to a conclusion, therefore will say but few words on the other parts of the case which belong to the steam-engine. Gentlemen, I am reminded, that in order to give a colour to the variation that they have practised in the construction of their wheel, they make the shaft go quite through; in the plaintiffs', the shaft does not go quite through. Gentlemen, whether the shaft goes quite through or not, is a matter of detail, in no respect bearing upon the question of the invention; and supposing that was an improvement, they have no right to pirate the invention

---

* *Minter* v. *Wells et al*, vol. i, page 622.

Seaward et al.

of the plaintiffs',—they have no right to improve upon it (which, however, they do not),—they have no right to improve on it, and then say, we will use so much of your patent in spite of you. Now, if therefore you find that the defendants have adopted the plaintiffs' improvement,—if you find them working on an eccentric,—if you find them connecting the eccentric with the principal wheel, by the moveable rods,—if you find one rod is stiff and fixed, so as to produce this result, even if they greatly improve it, they have no right to take so much of our invention as we have already obtained a patent for. What they should do is, they should obtain our permission to use that, and then, if they have any improvement which they think will render it more valuable, they should take a patent, and work that improvement along with ours: they have no right to be pirating that part for which we have obtained a patent. Now I pass to the only remaining point which I shall present, before you hear the evidence, viz., the objection to the steam-engine. Such an objection does not come, I think, very favourably. They say, your patent is not good for your improvement in the paddle-wheels, because you have claimed an improvement in steam-engines, which improvement we say is not worth a farthing, and therefore we will destroy the whole. There is no foundation for that objection: the witnesses will tell you that it is perfectly novel, and a very considerable improvement, and that there are occasions where a steam-engine so constructed would be used with infinite advantage where no other steam-engine could be used at all. Gentlemen, you are all probably aware, that in a steam-engine, the great point to be obtained is to turn an alternating motion into a rotatory motion; and the object of this invention is, consequently, to turn the motion of a steam-engine into a rotatory motion, and it is done by having the pistons moving not in a straight cylinder up and down, but by having the cylinder semicircular, the piston vibrating backward and forwards in it, and it turns the vibrating motion into a rotatory motion.

Mr. Baron Alderson.—What is the objection to that invention?

Sir F. Pollock.—I really hardly know; they say it is of no use, or that it will not work, or something of that sort.

Morgan et al. v.

The Attorney-General.—I shall show that it cannot be made by the specification; and, secondly, that it is of no use if it could.

Mr. Baron Alderson.—One of those two objections is certainly open to you.

Sir F. Pollock.—(After describing the operation of the engine, and illustrating it by various models, proceeded.)—That the engine can be made from the specification you will readily perceive. They say, when it is made it will not work. I think that the simple contrivance I have laid down before you proves that it will work; and if it will work, there is no doubt there are situations where it will be of particular advantage. I will point out one. At present the mode in which it is necessary to arrange the steam-engine and the wheels, requires much more room than would be necessary with this engine, and it would be very much lighter, which, in the present increase of steam navigation, is of the utmost importance, and this will accomplish several of these objects. Now, gentlemen, understand me; we do not say they have infringed this,—we say, they have infringed the paddle-wheel; but then they come and say, we will try and trip up this patent, if we can, by attempting to prove certain facts which have nothing to do with the inquiry. I am sorry I have detained you so long, but it is necessary that I should put you in possession of the invention; and I believe that simply exhibiting these models before you, has attained the object of putting you in possession of what is my case for the plaintiffs more than if I had, in the absence of them, attempted a laborious and minute description. I have to make but another remark,—it is this; probably the remark may be superfluous to some, and perhaps to all of you; but it is this, that there are in mechanics certain equivalents which are perfectly well known; that which may be done, for instance, by a pulley, may often be done by a crank, and *vice versâ*: that which may be done by a screw, may frequently be done by a rack and pinion, and are what may be called mechanical equivalents, so that you may, in every machine that can possibly be invented, substitute some other known mechanical equivalent, that shall, to an unwary eye, appear to be a difference, but to the mechanical mind the matter is precisely the same. For instance, on this side of the model is a crank, which is made to

Seaward et al.

produce an up and down motion; on the other side is an eccentric doing precisely the same thing; and the object of this is to show that the substitution of a crank for an eccentric, or an eccentric for a crank, will not make any difference; so you will find in some other details that the substitution of an equivalent is, in point of mechanics, precisely the same thing. You are not merely to look to the shape, but to the substance: you are first to seize the spirit of the invention, to see wherein the ingenuity consists,—to see what was the device by which the man who claims the invention overcame the difficulty to be struggled with. In the present case I say it was this, it was by having the principal wheel connected with an eccentric wheel, and then made to play into each other by a series of movements, one arm of the eccentric being stiff and fixed, and the others moveable, for the purpose of obtaining the proper angle to float-boards; wherever you find such an arrangement it will be the plaintiffs' invention. I will conclude, and I am confident you will do justice between the parties.

William Carpmael, Civil Engineer, sworn.—Examined by *Sir W. Follett.*—I am familiar with the improvements made from time to time for the last fifteen years connected with paddle-wheels; have examined almost everything, if not everything, brought out in respect to paddle-wheels; have read this specification attentively.

Mr. Baron Alderson.—What is the point of invention in this patent?

Mr. Carpmael.—I consider the improvement stated in the specification to be the obtaining any required angle to the float-boards of paddle-wheels, by means of the rods, *g*, *h*, *i*, *j*, and *k*, the one of them being a fixed and governing rod, that is, *g*, the others being moveable. The one fixed rod governs the whole, and the other rods which are connected to the float-boards each by a pin or moveable joint, and the other ends of the rods are connected to a disc.

Examined by *Sir W. Follett.*—Any angle may be obtained by the construction I have pointed out, and consequent upon the construction: this I believe to be perfectly new. It is an advantageous improvement that paddles should be made to enter in that way. There is no loss of

Morgan et al. v.

power; the moment the float-boards get into the water they come fully into action, so much as is immersed, and there is the same advantage in leaving the water. I have seen the defendants' paddles on the vessel called the Levant: they are constructed on the same principle as the one I have described. The float-boards in the defendants' wheel are controlled to move in succession by means of the same rods, *h*, *i*, *j*, and so on, as in the plaintiffs': they are identical; they are each attached to a stem, one to each of the float-boards, by moveable pin-joints, that is, to the stem, *f*, as it is called in the specification.

By *Mr. Baron Alderson.*—On each of the float-boards, and to the strap or disc, A, by a further moveable pin-joint; it is a strap revolving upon an eccentric axis, but it is called A, in the specification. In the plaintiffs' model, and also in the specification, the rod, *g*, is a fixture to that disc, A, which revolves on the axis, B. The axis, B, in the defendants' wheel is a pulley affixed to the side of the vessel, eccentric to the main shaft. In the plaintiffs' arrangement the fixed rod, *g*, in addition to controlling the other rods, *h*, *i*, *j*, *k*, also itself operates upon one of the float-boards: in the defendants' the fixed rod, *g*, is not made to perform upon a float-board directly, but by the intervention of what is called a link, that is, a rod having a hole at each end. There is therefore a deviation from the plaintiffs' arrangement of the eccentric axis being placed or bolted at the ship's side, and the governing-rod, *g*, not controlling the float-boards directly, but by the intervention of the link I have described. Those are the deviations, then; the main shaft of the steam-engine is thereby enabled to pass from side to side.

Mr. Baron Alderson.—That has nothing to do with it; it is no part of the invention claimed.

The Attorney-General.—Your Lordship will find it extremely material.

Examined by *Mr. Baron Alderson.*—In the plaintiffs' wheel, in consequence of having the patented combination of the rods, *g*, *h*, *i*, *j*, *k*, between the two framings of the wheel, the shaft from the engine is only made fast to one main-plate, the instrument by which the float-boards are controlled being placed between the two framings, in room of being placed on the side of the vessel. [The

Seaward et al.

witness here entered into a long explanation of the models of the plaintiffs' and defendants' wheels, showing the similarity of the parts and operations in each.] Anything that will make the disc turn round and change the centre is in effect the fixed arm.

Examined by *Sir F. Pollock.*—No such principle was ever before applied, to my knowledge, to the producing of varied angles in paddle-wheels. I know Buchanan's wheel; it was introduced about 1813; the effect produced in this paddle is that the floats are always parallel to themselves and to each other: they always attain the same angle in one direction, and always retain the vertical line. This invention is quite different in principle to the plaintiffs' paddle; the effect produced is not the same; the means employed to produce the effect are not the same; neither is the utility the same. I am acquainted with Oldham's invention; it was patented in 1827; it is similar to Buchanan's, but there is superadded certain machinery by which a different result is obtained: the float-boards each take such a position that when the upper one is horizontal, the one in the water is vertical: all the others partake of the angle radiating from the centre of the upper horizontal float-board. The principle and effect are not in any manner similar to the plaintiffs'. The angle at which Oldham's float-boards enter and leave the water depends on the diameter of the wheel; in the plaintiffs' wheel any angle may be obtained, whatever be the diameter of the wheel. I know Poole's patent; it was taken out a few months before the plaintiffs': there is a groove in the side of the vessel, to control the movement of the float, so as to produce the change of angle: it does not in any manner resemble the plaintiffs' paddle.

Mr. Baron Alderson.—There is no similarity between the two; you say your patent is taken out for the mechanical means of accomplishing it, and not for the principle.

Examined by *Mr. Baron Alderson.*—Angles are given in the drawings.

By *Sir F. Pollock.*—It is desirable, if you have a very fast engine, or a slower engine, that the angles should be altered; the angle will vary for almost every vessel, depending on a variety of circumstances; many persons would like one angle for the same boat, and some would

Morgan et al. v

like another. What I conceive to be the best, would be a float-board that will enter and quit the water as nearly as possible at a tangent to a cycloidal curve, generated by the centre of the float-board. The cycloid varies according to the speed of the vessel, and the speed of the paddle-wheels. I am acquainted with that part of the specification which relates to the steam-engine, and have no doubt that a workman of competent skill could carry that improvement into effect from the description in the specification, and I consider that the mode of producing a rotatory motion described in the specification, is decidedly new. [The witness here described the engine, a model of which was handed to the jury.] I consider it has a variety of advantages, particularly the smallness of the number of parts, the lessening of weight, and the little space required.

Cross-examined by *The Attorney-General.*—I have seen a steam-engine prepared according to the drawings and specification; it was used to turn lathes,—it worked exceedingly well; I saw a second engine on the same construction, a larger one, but I did not see it at work. The bent stem described in the paddle-wheel, is no part of the invention; neither are the rods, *g*, *h*, *i*, *j*, *k*, that connect the bent stem with the disc, A, any part of the invention.

By *Mr. Baron Alderson.*—I mean, taken by themselves, my Lord, instrument by instrument.

By *The Attorney-General.*—The disc is no part of the invention; neither is the crank, the cut shaft, nor the paddle projecting beyond its axis, any part of the invention taken separately. It is the combination of all these parts in the manner described, which is claimed as the invention. It is of great importance to ascertain the angle at which the floats should enter the water, but scarcely any two persons agree what that angle should be.

Examined by *Mr. Baron Alderson.*—If it was required that the float-board should enter the water at a certain angle,—say at 45°, I would set the float-board, which is to be in connexion with the rod, *g*, at that angle on the water line, and mark the position; then carry on the float-board to a vertical position, which would be at its deepest position in the water; then bring the float-board to leave the water at the angle of 45°, by which I should

Seaward et al.

have the three positions shown in the drawing, and, by the ordinary rule in geometry, obtain the position of the centre of the crank, or eccentric axis, B; the angles being given, any person acquainted with the setting out of work, would readily produce the wheel desired.

By *The Attorney-General.*—The angle in the plaintiffs' wheel cannot be varied, without altering all the parts for that purpose, other than by raising or depressing the crank in a slight degree, by which the angle will be varied to some extent without reconstructing the parts. The float-boards may enter and leave the water at the same angle, if it is desired. The angle depends on the rods, and the length of the stem, *f*, and the crank. In the defendants' wheel you cannot vary the angle without reconstructing the wheel. There is nothing in Mr. Galloway's specification to show what the angle ought to be, nor do I think it could by possibility be given. It will vary according to the draught of water of the vessel, the stroke of the engine, and the figure of the vessel. Never heard of Cavé's wheel by name, till this suit commenced in the Court of Chancery; I heard of a wheel belonging to a vessel, that run between Dover and Calais; have seen a model of it; it is the same as Seaward's, without the drag link; the fixed arm, *g*, actuates a float-board, as well as controls the other float-boards; it contains the invention for which Galloway's patent was taken. A few months previous to the commencement of proceedings in the Court of Chancery, I was consulted by Mr. Morgan, as to whether a vessel coming from Calais to Dover, with an infringement of his patent, could be stopped; he did not state the name of the party infringing.

Sir F. Pollock.—If they will show it was published in England before our patent, I will give it up.

Re-examined by *Sir F. Pollock.*—Have seen ten or twelve sets of the plaintiffs' wheels, one set precisely according to the specification, with the floats projecting. The plaintiffs had, for a considerable time previous to my seeing the Levant and other paddles made according to Mr. Seaward's plan, constructed their wheels in the same manner that they do now,—perhaps two or three years before that. Having the axis in the centre of the float-board is decidedly better than having it at the end; it is a better arrangement, but is not different in principle. The drawings attached to the specification give a useful

Morgan et al. v.

angle. A workman, from those drawings, could tell the angle; a wheel constructed according to that drawing would carry into effect the improvements intended by the inventor; I have examined the Acropolis and the Levant, with defendants' wheels, they had no apparatus for altering the angle during a voyage. [The witness then, at the request of his Lordship, showed how to arrange wheels with the float-boards entering and leaving the water at different angles.]

Sir F. Pollock.—Will you just state the comparative advantages or disadvantages between a shaft going through, and not going through?

Mr. Baron Alderson.—That appears to me to be an immaterial part of the question altogether, because if your invention is a mode of giving motion by means of a certain combination of machinery of the wheel, so as to enable the float to enter the water at a given angle, that is your improvement; it may be that it may be more or less convenient to place it in one of two positions; but still if you invented that mode of adjusting the angle, you are entitled to your patent, the more or less convenience it appears to me to be immaterial. The question is, whether this combination is new, and whether it can be made from the specification.

Mark Isambard Brunel. Examined by *Sir F. Pollock.*—I have read the specification of Galloway's patent; I understand the steam-engine there described. I consider that it has great advantages. It occupies little space, and for particular purposes would be greatly preferred on that account. I consider it quite new; I consider the improvement in paddle-wheels claimed under Galloway's patent quite new and useful. I do not consider that Buchanan's wheel in any way resembles the plaintiffs'; it completely failed; neither are Oldham's or Poole's at all similar to the plaintiffs' wheel. The effect of varying the angle of the floats in the plaintiffs' wheel is produced by having one of the rods to which the floats are connected immoveably attached to the disc on the eccentric, and the other rods also affixed to the disc being moveable. If all the rods were fixed, or all moveable, no beneficial effect would be obtained. I have seen the defendants' wheels; I consider them to be on the same principle as the plaintiffs'. The variation of the angle of the paddles is produced in the same manner.

Seaward et al.

There are some variations in the details, but there is no difference of principle. I consider that a crank and an eccentric are well known equivalents in mechanics; the action is the same in both. From the specification and drawing I could obtain any required angle without any difficulty.

Cross-examined by *Mr. D. Pollock.*—I have never seen the engine at work; I think it useful. If I had one I should use it for pumping water; I can judge of its probable effect without having seen it at work. I consider it would be useful for many other purposes. I should have no difficulty in making paddles to any angle with the drawing and specification before me. If I were to set about making a paddle-wheel, with the floats to enter the water at a different angle to that shown in the drawing, I should obtain any required angle by the throw of the crank, or by lengthening the stem, *f.* The drawing and specification do not direct attention to such necessary alteration. There is no fixed point given; any person when he finds what that angle is, would find it sufficient for his purpose.

Re-examined by *Sir F. Pollock.*—The angle described has been found an advantageous angle.

Mr. Baron Alderson.—Is that what you claim?

Sir F. Pollock.—We claim nothing of the kind; the word "angle" never occurs till we come to what we call the claim, which is no part of the specification.

Mr. Baron Alderson.—"Secondly, as regards my improvements on machinery for propelling vessels, the mode hereinbefore described of giving the required angle to the paddles by means of the rods, *g, h, i, j,* and *k.*"

Sir F. Pollock.—Which required angle is that which we have already given.

Mr. Baron Alderson.—The difficulty is, that if your specification only enables them to make it at one angle, your claim is only to make it at that particular angle, then there would be no infringement; if, on the other hand, your claim is to make it an adjustible angle, then you ought to show that your specification will adjust it; that is the difficulty.

Witness.—I should have no difficulty in altering the lengths, so as to produce a paddle at a different angle, by the drawing. The drawings and description are sufficient

Morgan et al. v.

for a workman to make a wheel with other angles to the float-board.

By *Mr. Baron Alderson.*—I would do it by altering the lever. Every inch will make an alteration.

Mr. Baron Alderson.—Every man is not to be required to make the experiment; that was ruled in the malt case, and other cases, over and over again, when a person did not define to what extent the malt was to be dried, and what number of degrees the thermometer was to be before it assumed a particular colour.* The Court of King's Bench laid down the rule, that if you are compelled to make the experiment, and to see how much the heat ought to be, the patent is bad.

Sir F. Pollock.—Here you would have no occasion to make experiments.

Witness.—To ascertain what should be the proper angle, if I placed the paddle at the angle I wished to make it enter the water, I should soon find the angle of the other floats; and with the assistance of the drawings and specification, I should have no difficulty in doing so.

Mr. Baron Alderson.—It must not be an idea, but an idea worked out.

Sir F. Pollock.—As angles vary very considerably, it would have been almost impossible to give tables.

Mr. Baron Alderson.—If you show on the face of the specification, or of the drawing, or by the ordinary use of the understanding, that a workman of ordinary capacity and experience has the power of making it to the required angles, you will accomplish the problem, but if you are to tax Mr. Brunel's invention, that will not do.

The Attorney-General.—I submit, on Mr. Brunel's evidence to your Lordship, that the plaintiff ought to be nonsuited.

Mr. Baron Alderson.—I cannot say how far that evidence may be altered; I have a strong opinion on that point.

The Attorney-General.—I do not suppose that my Learned Friend will call witnesses to contradict Mr. Brunel.

Sir F. Pollock.—I mean to contend that this can be done, and it has been done at the present moment.

Mr. Baron Alderson.—Your invention is this, Sir F.

---

* *The King* v. *Wheeler*, vol. i., page 394.

Seaward et al.

Pollock; what you claim is the mode hereinbefore described of giving the required angle.

Sir F. Pollock.—We mention the angle, but that which comes in at the end of the specification, as indicating the claim, may help but never can hurt the rest of it.

The Attorney-General.—I say that is the very essence of the patent, because it has been determined that the title is not material; that the specification is not material you may disclaim.

Sir F. Pollock.—Do you take the objection?

Mr. Baron Alderson.—I cannot tell the effect of the evidence; the evidence is not completed. I have got Mr. Brunel to say, in effect, this,—I do not find in the drawing or specification any mode of entering at any required angle. I could make a wheel whose float would enter at one angle, and come out at some other angle. The construction of the wheel, according to the specification and drawing, I think would be a useful invention; there are instructions, I think, enough to make a wheel of this kind from the specification. The first witness says, all the engineers differ as to the convenience of the particular angle at which the floats are to enter the water. You say, I have invented a method which shall give the means of making the float enter at a required angle, that is to say, at the angle which the engineer for the ship or boat, or anybody employed for that purpose, shall determine to be, in his judgment, the proper angle at which the float shall enter the water. Suppose any engineer was to be of opinion that it would be very convenient that the floats should enter the water at the angle of 30°, and should be vertical when they get to the lowest point, and then I was to go to anybody and ask, from this specification make me a machine that shall enter the water at 30°, it is plain from Mr. Brunel's evidence that they have no instructions from the specification to do that.

Sir F. Pollock.—I think there are instructions sufficient to do that, but I think it is not necessary that this should contain specific instructions how to make it for every possible angle at any length and breadth, and so on.

Mr. Baron Alderson.—Then he ought to say this: "My claim is for a particular angle." If I cannot show a general mode for making it at any angle, I ought not to claim the invention to enter at any angle.

Morgan et al. v.

Sir F. Pollock.—If I can show that an engineer taking this specification would have no difficulty in adapting it to any angle whatever, or that any rules for the proper adaptation of it to a particular angle would be of no use, but very inconvenient, and would be a burden to the public with respect to the specification, more than an assistance, I apprehend that I should be entitled to your Lordship's judgment; I think I shall be able to prove that.

Mr. Baron Alderson.—I do not think the question ripe for consideration.

Alexander Parkes, sworn. Examined by *Sir W. Follett.*—I am a civil engineer; I have read the specification and examined the drawing of this patent, and from them I could without difficulty make the wheels so that the paddles may enter the water at an angle of 30°, or any other angle that may be required. All I should require would be the diameter of the wheel, the immersion of the float, and the angle you desire. I usually do it in this manner: supposing a diameter of twenty feet be given, the immersion one-sixth or one-seventh or one-eighth of the diameter of the wheel. I place my middle float vertically under the axis of the wheel; the float at entering, I place at the required angle; I likewise place the float which is about emerging or that has just emerged from the water at the required angle, it is immaterial whether it is the same or not. I then decide upon the proportion which shall exist between the depth of the float and the length of the lever or bent stem, *f.* I have these three distinct points, and I want a fourth,—a radius from which I can describe an arc which shall intersect the three. I determine the fourth part by taking any distance in my compasses and describing an arc above and below the centre of the bent stem of the middle float. I do the same from the stems of the floats entering and leaving the water; through the points of intersection of those arcs I produce lines which shall intersect each other in a point which is the centre of the eccentric axis. The length of the rods is optional, depending upon the diameter of the disc which revolves on the eccentric axis. The larger the disc the shorter the arms, and *vice versâ.*

Mr. Baron Alderson.—Is everybody to be put to all these experiments?

Seaward et al.

Sir F. Pollock.—There are no experiments at all required; it requires only that a person should have a common knowledge of geometry; these things have been done by the first witness, Mr. Carpmael, and other persons in Court since the discussion has arisen; any person of competent skill may do it.

Mr. Baron Alderson.—You must have a person of competent skill and knowledge to do it at the time the specification was made; if there have been methods found out afterwards of doing these things, no doubt it is a very different thing.

Sir F. Pollock.—It may be done with the same facility as if you were to have a patent for making a particular kind of lock, anybody would know how to adapt it for a drawer, or door, or a chest, or an upright or downright bolt; anybody would be able to do that.

Witness (examined by *Sir W. Follett*).—I do not think an engineer of competent knowledge from the specification and drawing would have any difficulty in adapting the paddles to any required angle; I consider the principle of the invention to consist in giving any desired angle to the floats, by means of the instruments, *g*, *h*, *i*, *j*, *k*, and the bent stem, *f*, the rod, *g*, being a fixture in the disc, A, revolving upon the eccentric axis, B. I have seen some of the wheels made by the defendants, they are precisely on the same principle as the plaintiffs'. There are some trifling variations in the details, they have removed the combination of the parts from the inside of the wheel and have placed it outside the wheel next the vessel, and thereby are enabled to carry the shaft through; the principle is the same as the plaintiffs', and I do not consider the alteration any improvement. I am acquainted with the steam-engine; I consider it quite a new and useful invention; I saw one at work at Mr. Morgan's factory in Holland-street, it was used to drive machinery; it worked very well; it was more smooth and easy in its action than any engine with which I am acquainted. I saw another at the factory at Farnham-place, and it worked equally well. I am acquainted with Buchanan's, Oldham's, and Poole's paddle-wheels; I consider them totally different in principle to the plaintiffs' wheel.

Cross-examined by *Mr. Alexander.*—The first wheels made according to the specification were used in a small

Morgan et al v.

boat running between Venice and Trieste; they were quite successful, and are still on that vessel. The next set were made for the Confiance; they were found too small in proportion to the vessel. A second set for the same vessel was also found too small. A third set failed in consequence of one of the stems breaking. A fourth set was made for the Confiance; I cannot tell whether those now in the Confiance are the fourth or fifth set, they were made according to the specification, with slight variations in the details.

Re-examined by *Sir F. Pollock.*—I have made a great many wheels on the plaintiffs' plan, I dare say upwards of thirty pairs; amongst others were the Columbia, the Firebrand, the Lightning, the Medea, and the Spitfire; they were made in strict accordance with the specification; they were all successful.

Cross-examined by *The Attorney-General.*—We now use a high-pressure engine in the manufactory; the demand is so great for the paddles, that we were obliged to purchase an engine, till the one we have in hand according to the patent is finished.

George Cottam, sworn. Examined by *Sir W. Follett.*—I have been an engineer for fifteen or sixteen years. I am acquainted with the engine described in the specification. I believe it to be quite new; I consider it has many advantages, particularly in its simplicity, requiring so little space, and having so few parts, I have no doubt it would work exceedingly well. I should have no difficulty in making it from the specification. I think any engineer of skill would be able, from the specification and drawing, to adapt a paddle to any required angle; I should not find the slightest difficulty in doing so. I think any carpenter's foreman knows sufficient geometry to enable him to make a paddle with any angle he required, from the drawing and specification; it is about a school-boy's first week's lesson in geometry. A clerk would not be fit for an engineer's office if he did not understand sufficient geometry for that purpose. [The witness, after giving a description of Buchanan's, Oldham's, and Poole's wheels, very similar to the first witness, stated, that the principles upon which they were constructed were totally different from that of the plaintiffs'.] I have seen the Acropolis with the defendants' wheels on; they are precisely on the same principle as those described

Seaward et al.

in Galloway's specification, the only variation being that they have placed the moveable parts outside instead of inside the wheel, and have carried the shaft all through, to allow of which, they have made an enlargement of the revolving collar. I consider the collar to coincide in principle with the disc, and it gives the same motion as Morgan's does by the small crank.

Mr. Baron Alderson.—It only proves what Mr. Brunel said, that a crank and the eccentric-wheel are the same.

Cross-examined by *Mr. Jervis.*—The skeleton model which I produce was done without any suggestion that it would be necessary. When I first received the specification, I sat down and produced five drawings of wheels; I arranged two wheels in fifteen minutes; I took them at two different angles, and this was the method [handing in the drawing]. I read the specification, and then looked at the drawing, and set three of the paddles at the angles at which I wished them to be immersed to enter and to leave the water, and thus obtained three points, from which, with the ordinary rule of three points given to find a fourth, I got the centre of the eccentric axis, B. I had no difficulty. A party in ordering such wheels would give those three points; they being given, no one capable of setting out a paddle-wheel could fail in carrying out the invention.

William Joseph Curtis, sworn. Examined by *Mr. Butt.*—I have been an engineer fifteen years. I know the engine described in the specification. I consider it decidedly new, and has advantages over the common engine: in the first place it has reduced the friction; in the next place, applied to horizontal cylinders, it is a decided improvement; I made one in 1829 from the drawing; there is no difficulty in making it from the drawing and specification. I tried an experiment with this engine, by placing it alongside of an engine with a common vertical piston and cross-head of about the same power, and supplied them both with steam from one boiler; after they had worked some time I raked out the fire, and Galloway's engine continued to work twenty minutes after the other had stopped.

Mr. Baron Alderson.—Gentlemen of the jury, I will explain that this patent is taken out for more than one thing; the plaintiffs should establish the newness and utility of the steam-engine as well as of the paddle-wheel.

Morgan et al. v.

The Attorney-General.—There are issues joined on it.

Mr. Baron Alderson.—Yes, there are issues joined on it, which would make so much of the patent invalid; that is to say, according to the law of the case as it at present stands, the effect would be that it would only be invalid at the present time. By application to the Attorney-General, that part of the patent might be struck out, and then the other part of the patent would stand good, but then in this cause the costs would be determined by the result of the facts on each issue as they at present stand; that is an improvement introduced into the patent law by Lord Brougham, and a very good one it is.

By *Mr. Butt.*—I made the two first pair of paddle-wheels upon this plan. From the specification and drawings I should find no difficulty in making paddles to any angle required; and any competent engineer would be able to do the same. I should not consider my foreman competent to conduct my works if he could not make a wheel at any required angle from the specification and drawings.

Cross-examined by *The Attorney-General.*—Galloway gave me instructions in making the first wheels, Morgan paid me for them; I received the order for them in February, 1829, and was paid for the first on the 30th of April, and for the other on the 12th of June, 1829. I do not know to whom these were sold. I only know that they were sold to the Venice and Trieste Company. I made them at my own manufactory at Bermondsey, they were shipped at the docks.

By *Mr. Baron Alderson.*—They were sent to the docks and shipped by a common trader.

By *The Attorney-General.*—They were made exactly according to the patent.

The Attorney-General.—Now, my Lord, I submit, the patent is dated the 2d of July, 1829; those two pair of wheels are made between February and April, 1829; they were finished and sold two months before the patent was taken out. There was one paid for in April, and the other in June.

Mr. Baron Alderson.—I think there is an end of the case. This is a man who is a maker of the article himself.

Sir F. Pollock.—I apprehend that a man, in the first

Seaward et al.

place, must conduct many experiments before he succeeded.

The Attorney-General.—This is not an experiment.

Sir F. Pollock.—But there is no publication in England, my Lord.

The Attorney-General.—This witness makes them for sale at his own manufactory, and they are sold and sent out; he might have made ten pair in this manner; suppose there had been ten pair of wheels made in this country for an English company carrying on trade between Venice and Trieste.

Sir F. Pollock.—Your Lordship may remember in *Minter* v. *Wells et al.*,[*] which was tried before your Lordship, the chair was actually made six months before the patent.

Mr. Baron Alderson.—That was in the man's own manufactory.

Sir F. Pollock.—Till my friend has done with his cross-examination, I will not say a word.

The Attorney-General.—I will stop here for the present.

Mr. Baron Alderson.—I think the objection decisive, standing as it does at present.

Re-examined by *Sir F. Pollock.*—The wheels were put together in my shop when finished, and afterwards taken to pieces and packed up to be sent abroad.

Mr. Baron Alderson.—If you cannot alter these facts, I think there is an end of the case; I only wish to mention to you what my opinion is.

By *Sir F. Pollock.*—I know the paddles were to be sent abroad, to be applied to vessels of the Trieste Company.

Mr. Baron Alderson.—And then they thought it worth their while to take out a patent. A man makes a thing, sells it, and then takes out a patent.

Sir F. Pollock.—They were never sold till September.

The Attorney-General.—This witness was paid for them.

Mr. Baron Alderson.—And they were delivered to the Venice and Trieste Company at the docks. I must call the plaintiff. If you can alter the facts, of course you are at liberty to do so.

Sir F. Pollock.—I can alter the facts; but, with your Lordship's permission, I would say a word or two upon

---

[*] Vol. i., page 622.

Morgan et al. v.

it. If this had been done, would the doing of this by the plaintiffs have prevented anybody else taking out a patent for that?

Mr. Baron Alderson.—Most certainly it would, if a person make a machine and sells it openly.

Sir F. Pollock.—It was not sold openly. According to my instructions it was made secretly, and was sent to Trieste. There is no evidence of sale to anybody.

Examination by *Sir F. Pollock.*—I never showed them to anybody; I would not, of course, let any one see them.

Cross-examined by *The Attorney-General.*—I knew that a patent was being obtained; I should not allow anything to be done to the prejudice of the patentee; it would have been dishonourable.

Sir F. Pollock.—If my friend takes the objection now, I am quite prepared to meet it. I will add these facts, that I am in a condition to prove, that in the first place, when the order was given for the machine, the men were told to keep it secret. It is quite plain they were aware it had some communication with the patent.

Mr. Baron Aderson.—I will read to you the facts I have on my notes.

Sir F. Pollock.—Will your Lordship allow me to add some other facts?

Mr. Baron Alderson.—You can add any facts you please.

Robert Jeffries, sworn. Examined by *Sir F. Pollock.*—I am in the service of Mr. Clement; I was employed by Mr. Galloway in 1829. I had to superintend the making of two pair of wheels at Curtis's factory, which Galloway told me were being patented, and gave me particular directions on that account not to show them to any person.

Cross-examined by *The Attorney-General.*—I was in constant attendance while the wheels were being made; a person named Williams came to the shop and saw one set of wheels complete.

Re-examined by *Sir F. Pollock.*—Williams was admitted at the dinner hour by one of the workmen; I complained of his being admitted.

Aristides Franklin Mornay, sworn. Examined by *Sir F. Pollock.*—Mr. Morgan is the sole manager of the Venice and Trieste Company, and principal owner.

Cross-examined by *The Attorney-General.*—It is a joint

Seaward et al.

company to a small extent. Mr. Morgan is not the agent to the Company; he is a shareholder.

By *Mr. Baron Alderson.*—I believe there are shareholders in London and shareholders abroad.

Mr. Baron Alderson.—I will take the fact to be that Morgan was a shareholder, and manager of a joint-stock company, of which there were shareholders in London and Venice.

Sir F. Pollock.—The object of that was the navigation between Venice and Trieste, to which it was entirely confined.

Benjamin Williams sworn. Examined by *Sir F. Pollock.*—I am a boiler maker; in 1829 I was at Trieste, in the service of Mr. Morgan. I received a pair of paddle wheels in July; they came in separate pieces, and were sent from Trieste to Venice, where they were put together and fitted to the boats immediately on their arrival there; the boats were completed and commenced running in September.

By *Mr. Baron Alderson.*—The patent is dated in July, I think?

The Attorney-General.—The 2d of July, 1829.

Joseph Clement sworn. Examined by *Sir F. Pollock.*—I have had upwards of forty years' experience in mechanics. I did the practical work of Babbage's calculating machine. I am acquainted with Galloway's engine; I believe the manner in which the oscillating motion produces a rotary motion in the steam-engine is new. I think it would be useful in some cases in consequence of its taking so little room and being very light. I am acquainted with the paddle-wheel, and consider that the combination is quite new. Buchanan's and Oldham's wheels are quite different from Mr. Galloway's; Poole's is also different, though I think the effect produced is the same, but the means for obtaining that effect, viz., an eccentric groove cut in the ship's side is very bad, I think it could not be worse. Seaward's wheel is the same as the plaintiffs' with this exception, that the eccentric or crank (which is both the same in principle) is fixed to the side of the paddle-wheel next to the vessel, and Morgan's is placed in the centre of the wheel and fixed to the outside of the frame of the paddle-wheel. The principles are precisely the same. I should feel no difficulty in making both the engine and paddle-wheel from the specification and drawings, and

Morgan et al. v.

from those alone. I could construct the floats of a paddle to enter and leave the water at any required angle; any man that has been properly instructed in mechanical drawings would not find any difficulty in doing so.

Cross-examined by *Mr. D. Pollock.*—If I were required to make a paddle-wheel with floats to leave the water at a different angle to that at which they entered, I should take for granted the float under the axis to be perpendicular, then I should draw my water line, and from that I should raise a line of the required angle at going into, and at leaving the water, representing those float-boards. Then I would determine what would be the length of the bent stems, supposing it to be half the length or any other length (it makes no difference), that point being set out for the three floats. I would draw a line from each, making them intersect at a point, and in such manner, that from the point of intersection to the end of the bent stem, each line should be of the same length, which would give the centre of the eccentric axis.

Robert Pickering sworn. Examined by *Mr. Butt.*—I am an engineer, and have been in Mr. Morgan's service; I am acquainted with Galloway's wheel; those made by Seawards' are precisely on the same principle; I never heard of either the engine or paddle before the date of the patent, I believe they were quite new at that time. The engine was worked at Mr. Morgan's manufactory in Holland-street, and also at Farnham-place; they worked exceedingly well. It was the cast iron piston-rod that broke in the Flamer, it was no fault in the principle of the engine, it was not renewed in consequence of Mr. Morgan's becoming a bankrupt at that time.

Henry Mornay, jun., sworn. Examined by *Sir F. Pollock.*—I am in Mr. Morgan's employ, I have made drawings for wheels from the specification at different angles from those put down there. Any competent engineer, from the specification and drawing alone, would be able to construct a wheel to enter and leave the water at any angle he liked.

Cross-examined by *Mr. Jervis.*—Morgan makes his connecting-rods of different lengths, and he does so that the other floats should follow in exactly the same angle as that produced by the fixed rod.

Seaward et al

William Wheldon sworn. Examined by *Sir F. Pollock.*—I was foreman to the plaintiff from 1829 to the latter end of 1831. I helped to make an engine according to the patent, at the factory in Holland-street; I helped to make a second engine, which was erected in the new factory; they both worked well, they required less fuel than other engines; I could make the engine from the specification and drawing.

William Mann sworn. Examined by *Sir F. Pollock.*—I have seen Galloway's engine; I consider it quite new; I have seen it work; it was used to turn lathes and other machinery; its compactness is a great advantage.

Robert Grundy sworn. Examined by *Mr. Butt.*—I am a King's pilot, and have been accustomed to steam-vessels. I piloted the Confiance; it had Morgan's wheels; they answered the purpose well, and gave greater speed to the vessel. I have been on board every vessel with Morgan's wheels in His Majesty's service, and His Sardinian Majesty's vessel, and the Trinity Yacht; I consider they gain a knot and a half in fine weather, and a great deal more in rough weather, better than common wheels. I have been in all sorts of weather.

Cross-examined by *Mr. Jervis.*—I was in the Confiance when the first pair of Morgan's wheels were tried. There were three or four sets tried one after another; the first did not break; the second did, and the third also; the fourth I believe have been taken off the vessel after four years' service.

George Roberts sworn. Examined by *Sir F. Pollock.*—I am engineer to the Confiance, it had Morgan's wheels; one set of wheels had the paddles turning on an axis at the extremity; they were continued on the vessel till they wanted repairing; they answered very well. The first pair failed in consequence of two of the radius-rods breaking, owing to the badness of the weather; they were in use previous to their breaking about fifteen months, they worked well previously; the second pair worked, I believe, two years and one month, they are now under repair.

Benjamin Williams recalled. Examined by *Sir F. Pollock.*—I worked the wheels that were sent to Venice; I began in September; I was then in Mr. Morgan's service. Three sets of paddles were sent to me at Venice, they were all of the same construction with the axis at the

Morgan et al. v

end. I afterwards used two pair with the axis in the middle of the float. I have been out between Venice and Trieste in very heavy weather; no accident ever happened to the wheels; the vessels never went any where else except between Venice and Trieste.

Cross-examined by *The Attorney-General.*—I was in the service of the Company, but was sent out by Mr. Morgan in 1827; these vessels were used at that time with the old wheels.

Lieutenant Aplin, R.N.—I commanded His Majesty's steam-vessel, the Messenger, with the old wheels, about a year and a half, and was afterwards appointed to the Columbia with Morgan's wheels; I went two voyages to the Mediterranean; we had very bad weather in crossing the Bay of Biscay. I consider Morgan's wheels far preferable to the old plan; they add to the speed of the vessel, and do away with the tremulous motion; they weather the sea in storm better, and preserve the paddle-boxes, whereas, in other cases, the paddle-boxes were very frequently destroyed in bad weather.

William Henry Allen, first mate of the Firebrand, sworn. Examined by *Sir F. Pollock.*—I consider Morgan's improvement in the paddle-wheel made at least a mile an hour difference in our speed. I have been once or twice in the Bay of Biscay, in the North Seas, and frequently on the Dutch Coast, with Morgan's wheels.

Robert Rastrick sworn. Examined by *Mr. Butt.*—I was engineer to the Lightning nine years; three years of that time they were fitted with Morgan's wheels, by which we gained at least a knot an hour; I went to all parts, to Stockholm, four times across the Bay of Biscay, and have crossed the Irish and English Channel; only three floats were broken during the whole of that time.

Thomas Allen sworn. Examined by *Sir F. Pollock.*—I have commanded the Comet steam-vessel with the old wheels twelve years. I afterwards commanded the Lightning for twenty-one months with Morgan's wheels; they answered well; we gained a knot an hour by them; I have been in very bad weather with them; I was in the North Seas seven days when the vessel could carry nothing; we were at Elsinore, Copenhagen, Stockholm, and other places. I consider them a very great improvement.

Sir F. Pollock.—That is my case, my Lord.

Seaward et al.

The Attorney-General.—Gentlemen, I trust that it will not be necessary that, in discharging my duty, I should consume any considerable portion of your time. Is it not in evidence, and was it not fully known to Morgan, that Cavé's wheel is the same as his? I shall prove that Cavé's wheel was known in France as soon as 1827; that vessels propelled by Cavé's wheels openly and daily navigated the River Seine from Paris to Rouen, and from Rouen down to Havre. It is stated by my learned friend in the course of this trial, that Cavé's wheel is the same as Morgan's, and that if we can show that Cavé's wheel was known in England before the second of July, 1829, he will give up the cause. Now, gentlemen, I cannot show that Cavé's wheel was practised in England before the second of July, 1829; but I shall show that it was well known, and in public use, in France previous to that time. Was Galloway the discoverer? there is no pretence for saying that he was, for he might have got some notion from Stephens's wheel, or some account had been brought him of Cavé's wheel, and with this information he takes out a patent in 1829; and it is quite clear that that patent was bad, that the paddles made according to the specification would not work, and it was not until the improvement which was afterwards introduced, and the wheel made more like Cavé's, and then called Morgan's wheel, that it had any success. My clients fitted out the Levant; that vessel has sailed with these wheels on board, and it is a wish to put a stop to this honourable competition which is the foundation of this proceeding. It is a mere slavish copying, an imitation of another; but I allow by the law of England, if a person goes abroad and sees an invention, and is the first to take out a patent for it in England before it has been published to the world, that he is allowed to take out a patent for it, although it has been known for years in foreign countries, but certainly that person has no great merit; he is no inventor; he has only brought into this country what would probably be brought into the country in the course of a few weeks by some other person, and I cannot think he is at all entitled to that favour which juries would be anxious to show to a person who, by ingenuity and labour, had made a real discovery. Now, gentlemen, the first question you will have to decide, relates to the steam-engine. My Lord has already intimated to you, that by the law of England, if a

Morgan et al. v.

person take out a patent for two different inventions in the same patent, that unless both inventions are new and useful, and the specification is sufficient as to both, that his patent is invalid, and I venture to say that that is a just and equitable law. Now Mr. Morgan, or Mr. Galloway, rather, has taken out his patent for two things, viz., the engine and paddle-wheel, therefore, if you are of opinion that the engine is not an improvement, or that the specification for the engine is not sufficient, on that ground I shall be entitled to your verdict, and I believe I shall prove that the specification is not sufficient, and that if a person make an engine in exact conformity with the specification and drawing, it will be found not to work at all. My next objection is, that the steam-engine, if it could be made from the specification, is no improvement in steam-engines, otherwise, why is it not generally adopted, but although seven years have elapsed since the patent was taken, only three engines have been made, and for the last three years that part of the patent has gone into entire oblivion. Now, gentlemen, we come to the paddle-wheel, and my first objection is, that the specification is bad; you will see that it professes to communicate to the world the best angle at which the float shall enter and leave the water; and, secondly, how the machine is to be made to obtain the required angle. Now the angle at which the float should enter the water, is a matter of the greatest importance, and the angle at which the float should leave the water, is again a matter of the greatest importance. Engineers differ in their opinion as to what is the proper angle; Galloway professes to point out the proper angles, and undertakes to communicate how a machine may be contrived and executed, the floats of which shall enter and leave at the angle which is required; he states in his specification (after describing the engine), "and, Secondly, in an improvement on paddle-wheels for propelling vessels, whereby the float-boards or paddles are made to enter and come out of the water in positions the best adapted, (as far as experiments have determined the angle,) for giving full effect to the power applied." Well, then, experiments have determined what that angle is, and having determined that angle, it is of the utmost importance to navigation that it should be communicated to the country, and that it should be told that if a wheel is of a certain diameter, and the draught

Seaward et al.

of the ship so and so, then such and such is the proper angle for the float to enter, and such to leave the water. But, gentlemen, neither in his specification nor drawing has he given you any desired angles; he has in one instance, to be sure, in the drawing given you an angle. I shall show that that is a bad angle, that it will not answer; but he does not at all say that that is the required or proper angle; there is no direction in the specification or in the drawing for discovering what the proper angle is. I say, that on that ground the specification is bad, and that I am entitled to your verdict.

Mr. Baron Alderson.—That will be a question of law; my impression at present is, that the invention is for a machine for doing it at any angle that may be required, therefore, if it is capable of being adjusted so as to make a machine that would make any reasonable angle, that would be sufficient. It appears from the very part you read that it is a matter of doubt what this proper angle is, and that it is a matter of discussion, because it says, "as far as experiments have determined the angle." It shows therefore that the question what the angle is, is a matter in dispute, and probably of fancy. He does not say, "I claim the required angle," but "I claim the mode by which the angle may be gained." At the same time it is open to you to contend that he is bound to show a machine that will give any required angle.

The Attorney-General.—I now come to the point whether there is any mode pointed out by which the required angle can be obtained; I submit to you there is not, and it clearly appears from Mr. Brunel's evidence, that there is not; but other witnesses stated that looking at the specifications and drawings that they could obtain it; that the required angle being given, there were three points which were data; there was the angle at which the float enters the water, where it leaves, and the vertical angle, and from these three they could find the centre of the eccentric; I shall vary that evidence materially; I am prepared to call before you men of great knowledge in mathematics, and mechanics, who will tell you that it cannot be done; but as the evidence now stands, I must draw your attention to this—that they said the rods were all to be of equal lengths; now, if they are of equal lengths, it is demonstrated by that mode of calculating the centre of the eccentric, that the different floats will

Morgan et al. v.

not all enter and leave the water at the same angle; it is only by having the rods of unequal lengths that the floats can be made to enter the water at the same angle. I shall show that it will be necessary to make experiment after experiment to ascertain the length of rod required for every float, and that until you have done that, there is no means of constructing the machine to make the floats enter the water at the required angle; I shall show that this cannot be done by solving any mathematical problem, but only by a series of experiments. If that be so—if it turns out to be so on the evidence, it is quite clear that the specification is bad, and that on that issue, I am entitled to your verdict. Now, gentlemen, there is another ground on which I say this specification is bad, namely, that the claim is too large; the claim is, "Secondly, as regards my improvements on machinery for propelling vessels, I claim the mode hereinbefore described of giving the required angle to the paddles by means of the rods, *g*, *h*, *i*, *j*, and *k*;" (*g*, is the fixed rod, and *h*, *i*, *j*, *k*, are the moveable rods;) now, if he had stopped there, the patent might have been good, but he goes on to say, "The bent stems marked *f*, the disc, A, and the crank, B." The patent is taken for a combination, and it is only by infringing that combination that the action can be maintained; it is therefore material that the whole of the combination should be proved to be new, as upon that point this issue will depend, and this cannot be proved, because the bent stem, the disc, and the crank are old, and were worked for years previous to his patent precisely as he works them, and this will be proved by the witnesses I shall call before you. Now, gentlemen, we come to consider whether Galloway's plan is useful; I will at once admit that Morgan's is useful; it is not by any means so good as that which is practised by Messrs. Seawards, but it is useful, and has worked in several of His Majesty's vessels, and produced considerable benefit; but I say that Morgan's invention is one thing, and Galloway's another. You will bear in mind that the bent stem is one of the things claimed in Galloway's wheel; Morgan does not use this bent stem, and instead of having the projecting paddles with the axis at the extremity, he has them with the spindle in the middle; I shall be able to show you that from the manner in which the shaft is cut, from the manner in which the whole power is applied to one side of the

Seaward et al.

wheel, from the manner in which these projecting paddles are constructed, it is impossible that in a rough sea this wheel of Galloway's should work for any length of time. I shall show that it did not stand—that it gave way, and that it was found necessary to alter the construction. You have been told that these wheels worked well between Trieste and Venice, but you must be aware that these were summer seas, when the navigation is perfectly smooth and calm; but those vessels that were to go to the Bay of Biscay had Morgan's floats, and it was by his floats alone that it was possible they could be navigated. I submit to you, therefore, that Galloway's paddle was no improvement; you will have some evidence of its resemblance to Stephens's wheels; you will see that they are almost identically the same; there is the cut shaft with the crank in the middle, the stem, and almost all the particulars exactly the same as Galloway's. Now, gentlemen, as to the infringement, Galloway's invention consists in the combination of the rods, the stems, the disc, and the crank. I shall show that ours is a totally different combination; it has a cylinder that has a disc—it has a continued shaft; the disc is bolted to the ship's side; is not attached to the wheel; it operates in all respects in a different way, and we have never had the bent stem in one instance; therefore, if Galloway's patent is for the crank and the bent stem, and if we do not use them, I maintain that there is no infringement. Gentlemen, I will just refer to the issues you will have to determine; the first is not guilty, which raises the question of infraction; the second plea is as to whether the specification is sufficient; the third is, that the steam-engine is no improvement, and not useful; the fourth is, that it is not an improvement in propelling vessels; then comes the fifth, that the invention was not new at the time the patent was taken out. Upon that, as it is a matter of law, you will have the direction of the Learned Judge. The last plea is, that the invention, generally speaking, is of no use to the public; that merely involves the same question that I before submitted to your consideration respecting the utility of the steam-engine and the paddle-wheels. Gentlemen, these are the questions; upon each and every one of them I claim your verdict; I say that, according to the evidence that has been given, the specification is bad—the invention was not new, and was not useful; we have not

Morgan et al. v.

infringed it; the combination for which the patent is taken out is totally different from the combination in the wheel which we have constructed.

Bryan Donkin sworn. Examined by *Mr. Alexander.* —I have been an engineer about forty years. I have seen a model of the paddle-wheels fitted to the Levant by Messrs. Seaward. I have read Galloway's specification, and have seen a model prepared according to the specification. I consider the principles on which the various parts operate are the same in both, but the construction or combination of them very dissimilar. My opinion of the specification is, that it is defective in not explaining the mode of obtaining any required angle. I think few ordinary workmen would be able to discover a mode from the specification to find out the different angles that would be required. A man moderately acquainted with geometry might not find it very difficult to find out the proportion of the central axis to the eccentric axis or crank, to set the three angles that might be given; but in order that the whole of the paddles may enter the water precisely at the same angle, another discovery must be made. It is very easy to appropriate a certain radius which would have the effect, that is, after an investigation of the problem, to fix the three points requisite for determining the eccentricity of the crank; but the other paddles, not being governed immediately by the fixed arm but by the moveable rods, each of these paddles would assume a different angle to that attached to the fixed arm, therefore it is necessary to examine whether it is the bending of these bent stems, or whether it is in the position of the crank through the disc, or whether it is the length of the connecting rods; that must be ascertained by experiments or diagrams. There is nothing in the specification to guide you to the angle, except that which is in the drawing. I have seen Hill's paddle; its action is between vertical and radial. I have seen Binn's* wheel; the principle is not at all the same as Galloway's—the effect is produced by a hollow groove. Stephens's paddle with his improvements has fixed radial rods, with stems and cranks, and I should almost say, that it precisely resembles Morgan or Galloway's wheel; in principle it is precisely the same, and in the conformation too.

---

* Binn's wheel was similar to the one called Poole's by the plaintiffs' witnesses.

Seaward et al.

Mr. Baron Alderson.—These (alluding to Stephens's) are all fixed rods, and all go to the centre of the eccentric, and are all of equal length, are they not?

Witness.—I have not examined them, my Lord.

Mr. Baron Alderson.—They all go to the centre, they are all of equal lengths, and are all fixed: how can you say that that is similar in principle or detail to one in which there is one fixed and four moveable?

Witness.—They are all fixed; I did not observe it before.

By *Mr. Alexander.*—I consider Cavé's wheel is the same as Seaward's. My opinion is, that Seaward's paddle differs in principle to Galloway's, accompanied with considerable advantages. I have examined that part of the specification relating to steam engines; an engine made according to the drawing would not work; and if it could be made to work, in my opinion it would be good for nothing.

Cross-examined by *Sir F. Pollock.*—I think a competent workman from the specification, after an experiment, would be able to make the engine. I think few ordinary workmen would be able to get the required angle of the paddle. I could do it myself. I think my foreman could. I think any one with a little knowledge of geometry could find out the angle required. I think any person attempting to prepare a paddle-wheel should be moderately acquainted with geometry. There may be a great many ways of making this wheel. It would be impossible to put into the specification every mode of doing it; but I think it would have been quite possible to have put in such directions as would have saved a draftsman, or any body else, from trying experiments to produce the angle. A man possessed of the information he ought to possess would be able to do it. I think any person moderately acquainted with geometry, could sit down and work the problem so as to get the wheel at any particular angle.

By *Mr. Baron Alderson.*—I should say an engineer properly skilled in geometry should be able to find out how the angle is to be obtained.

Mr. Baron Alderson.—The question is, what would he find out, what in the ordinary course of his business; if there is any definite mode by which a man knows an angle is convertible to another, and he is able to do that

Morgan et al. v.

Testimony of scientific witnesses to have reference to general knowledge of witness & not to be any exercise of superior scientific skill on his part.

from his general knowledge on the subject, which he ought to possess, that is sufficient; but if he is required to sit down and invent a problem, that is what I conceive ought not to be the case; I want to know whether you mean one or the other of those two, for that is the point in dispute between the parties,—whether he is to sit down and solve the problem, or whether he is to sit down and refer to his general knowledge on the subject.

Witness.—He must sit down and refer to his general knowledge how the thing is to be done, and he would then find out the angle.

By *Sir F. Pollock.*—If he brought competent skill to the work, he certainly could not fail of doing it; I saw one set of Galloway's wheels at Woolwich; they would work in the North Sea or the Bay of Biscay, if made strong enough. There is no difficulty in making it strong; you may superadd weight to it; if made according to the specification, it would require to be much stronger than if made according to the improved mode.

Re-examined by *The Attorney-General.*—To ascertain the required angle, there is something required beyond what is shown in the drawing and specification; if you want a precise angle to a wheel, if a wheel is to be made of a different diameter to that shown in the specification, it would require a different contrivance; the different proportion of the various levers. It is necessary to work the problem before that contrivance can be found; an ordinary workman would not be able to ascertain the length of the rods without making experiments.

Dionysius Lardner, LL.D., sworn. Examined by *The Attorney-General.*—I have seen the specification and drawings of Galloway's steam-engine. It is decidedly not an improvement upon former engines, and I am sure it is not useful. I have read that part of the specification relating to the paddle; from that specification I do not think any workman, unless he possessed qualities greatly above those we understand workmen generally to have, could do it. I think it an extremely difficult thing; I have been present during the progress of the discussion to-day and yesterday, and I am really ignorant at this moment how it can be done. If a wheel were made according to the specification, and a workman were required to alter the angle, he would get himself into a train of difficulties that he would hardly find the end of. He would have to

Seaward et al.

consider whether he ought to alter the centre of the eccentric or the length of the rods—that was the very difficulty I suggested yesterday; I thought it would be solved by altering the position of the centre of the eccentric. If it be necessary to construct the paddles each precisely in the same manner, so as to enter into and issue from the water at the same angle and vertical below, I have a great doubt whether it would be possible with this combination; I will not say it is not possible, but I have great doubt whether it is possible to send each of the floats through the water in the same manner.

Mr. Baron Alderson.—That is to say, whether it is possible for each single float to enter at the given angle, to be vertical at a given point, and to emerge at a given point; you think it is a doubtful question whether it is capable of any solution at all.

Witness.—I think so with this combination.

Mr. Baron Alderson.—By which, of course, is to be understood an angle useful in steam navigation.

Witness.—Yes.

Mr. Baron Alderson.—There can be no doubt about that.

By *The Attorney-General.*—I am sure it would take a considerable time; probably, if a number of ingenious workmen had the work under their hand for some years, after a succession of failures, they would at length, by practice and patience, find out the technical rule for doing it.

Cross-examined by *Sir F. Pollock.*—I am not a practical engineer; I published that book.

Mr. Baron Alderson.—What is the book?

Sir F. Pollock.—*The Steam-engine familiarly explained and illustrated; with an Historical Sketch of its invention and progressive improvement; its applications to navigation and railways, with their maxims for railway speculations. By the Rev. Dionysius Lardner, LL.D., F.R.S., &c.* I will just ask you whether this be true? I will read a part of your own publication. The page is 298. [The learned gentleman then read from the book a description of the patent wheels, and an explanation as to how they were to be varied, in order to obtain any angle, together with the performance of the invention on many of His Majesty's steam-boats.]

Witness.—Yes, except that when I wrote that I was not

Morgan et al v.

aware of what I have learned on this trial, that some of these experiments were unsuccessful.

Mr. Baron Alderson.—That will do for the second edition.

Witness.—Yes, I will correct it.

By *Sir F. Pollock* (*reading*).—"It has been tried by Government in several well-conducted experiments;" is that true?

Witness.—Yes; that refers to Morgan's paddle-wheel, not Galloway's.

Sir F. Pollock (*reading*).—"Two vessels of precisely the same model supplied with similar engines of equal power, and propelled, one by Morgan's paddle-wheels, and the other by the common paddle-wheels; when it was found that the advantage of the former, whether in smooth or rough water, was quite apparent."

Witness.—Especially in rough water.

[The learned counsel quoted a great portion more of those points of the Dr.'s book, relating to the paddle-wheel, particularly as to the advantages derived from their adoption—the manner in which the angles of floats were varied by the eccentric axis, and of what he considered the invention to consist; the whole of which extracts the witness stated to be true, and that he had obtained his information from a Report of a Committee of the House of Commons on steam navigation to India.]

Witness.—The statement just read certainly does imply a method that, by shifting the centre, the angle may be altered; but I must say this, that my attention was not called then to the thing so critically as it has been now, but, had I been called on to find the mode, I should have had great difficulty; my book says it may or can be done by altering the centre. In the drawing there are certain things assumed; the angle which the bent stem takes is taken at a certain magnitude; the lengths of the bent stems are taken; from the three positions a centre is found, and that centre will fulfil the necessary conditions for one paddle-board; but the same conditions which it fulfils for that purpose may not answer for the others. I do not say they would not answer; I say it is impossible to see how they would answer. All I can undertake to say is, it might not be possible, it may be possible.

By *Mr. Baron Alderson.*—I think it is difficult to say

Seaward et al

whether it would or would not be possible from the specification.

By *Sir F. Pollock.*—I never made a machine in my life. I am continually consulted by persons engaged in arts and manufactures as an adviser; they do not ask me the dry question whether it may or may not be possible; they ask me the best way of obtaining their ends.

Re-examined by *The Attorney-General.*—If I had seen Galloway's wheel at the time I wrote my book the expressions I used would have been very different; I am quite sure Galloway's wheel would never be permanently useful. A separate calculation would be necessary for the other rods after ascertaining the requisites for the fixed rod; some wheels have eight or ten floats; the difficulty of ascertaining the angle increases with an increased number of floats.

William Brunton sworn. Examined by *Mr. Jervis.*—I have been an engineer upwards of forty years; I have read the specification of Galloway's patent relating to the steam-engine. I think an ordinary workman would be able with some experiments to make an engine from the specification, but I do not think it would be of any use at all when made. If a paddle-wheel was required of a different angle to that shown in the drawing, I do not think it could be done from the information contained in the specification. If the required angle was nearly this, or just this, I should say, follow this drawing and you would do it, but if you required an angle very different from this, it would be an exceedingly difficult thing, and I am not at all prepared to say how I could do it. A paddle made according to the drawing would not be useful; it would be worse than the ordinary mode by which paddles of this kind are constructed. The invention consists in the combination of bent-stem, radiating-rods, disc, and crank. I do not think Seaward's wheel an infringement on Galloway's; he has neither bent-stem nor crank; his disc is supported on what is called an eccentric, and his rods are taken from the exterior of the eccentric ring; he has no fixed arm, he has an arm fixed to drag round the eccentric ring.

By *Mr. Baron Alderson.*—It is not a fixed arm according to the phraseology of the specification.

By *Mr. Jervis.*—The fixed arm coupled with the drag

Morgan et al

link does not exactly perform the same office as the fixed arm in Galloway's plan, because that turns the ring, and to the ring all the rods are fixed; Seaward has no fixed radiating rod; they are all moveable rods, and his connexion is one that is only connected to the disc and not to any of the paddles.

By *Mr. Baron Alderson.*—The drag-link is fixed to the frame of the wheel, and all the other rods that move the paddles are moveable.

Cross-examined by *Sir F. Pollock.*—The mathematical principles of Galloway and Seaward's wheels are very similar.

Mr. Baron Alderson.—He states the variations such as they are; he says first, these are not bent-stems, but things whose support is in in the middle, then it is a variation. The second is, that instead of the crank, the disc is supported by an eccentric, which is a mechanical equivalent. The third is, that they are all moveable rods; then there is a rod fixed to the disc by which the disc is carried round, that has the same effect. Those are the three variations if they are real variations.

Sir F. Pollock.—Then, my Lord, I will ask no other questions of this witness.

John Isaac Hawkins sworn. Examined by *Mr. Alexander.*—I have been an engineer forty years. I do not consider Galloway's engine an improvement; it may have some use in it, but it would not be generally used. From the specification and drawing I do not consider that an ordinary workman would be able to make a wheel entering and quitting the water at different angles from that which the plan itself gives, without bringing a considerable share of ingenuity to invent a method of ascertaining that angle, or of ascertaining the machinery that would be necessary to produce the angle.

Cross-examined by *Sir F. Pollock.*—The engine may have some use; it might be applied to a variety of purposes: if it worked imperfectly it would perform some use; it has not a smaller number of parts than the high-pressure engines. It has an advantage so far as taking up less room than a steam-engine, but such an advantage is very inferior to the disadvantages.

Peter Barlow sworn. Examined by *Mr. Jervis.*—I am one of the Professors of Mathematics at Woolwich; I have read Galloway's specification; I do not consider a

Seaward et al.

workman of ordinary skill would, if he had a paddle to make with different angles from the angle shown in the drawing, be able to do it, there is not sufficient data. The lengths of the bent and other stems not being given, and the angles at which they arise from the paddles not being stated, is a very important omission. If the workman had ascertained these points, I do not consider the difficulty to be very great after that, but still it is a geometrical construction which I think ought to have been explained; having obtained the lengths of the bent-stems, the rods must either be of different lengths, or they must be placed at unequal distances on the circumference of the disc, that would require to be determined before the workman set about his wheel. I think there is a way by which you could determine the different lengths of the rods or places on the disc at which they are to be fixed. I think the manner is plain enough to a person who has a little knowledge; a man of tolerable skill, I have no doubt, would do it.

John Donkin sworn. Examined by *Mr. Alexander.*— I am an engineer; I have examined the specification, plans, and models; I do not think the engine an improvement; I do not think it applicable to any useful purpose; I do not think it could be used. An ordinary competent workman would have considerable difficulty, from the description in the specification and the plan together, to make a wheel which could enter and leave the water at an angle different from that at which the plan itself makes it enter; I doubt his being able to do it.

Cross-examined by *Sir F. Pollock.*—I think it requires more than an acquaintance with geometry. I think a man moderately acquainted with geometry might do it, after considerable trials; a moderate acquaintance with geometry is a quality which every person in an engineer's office ought to have; he should have sufficient for the present purpose.

Timothy Bramah sworn. Examined by *Mr. Jervis.*— I am an engineer, and have been so from twenty-five to thirty years. It is very difficult for me to say, whether an engineer of ordinary and competent skill could, from the specification and plan, make wheels at different angles from that shown in the drawing; I have no doubt I could find it out myself, but I do not know at present how to do it; it occurred to me yesterday when I heard of the three

Morgan et al. v.

paddles, but it never occurred to me before. I am at present unable to say I could set out a wheel of that sort at any given angle without some consideration.

Cross-examined by *Sir F. Pollock.*—I never considered this subject till yesterday; I made an attempt this morning with compasses and diagrams, and I think I could determine the three paddles; I did not pursue the rest.

By *Mr. Baron Alderson.*—I do not know at present how to pursue the rest; I have not considered the subject at all.

Francis Bramah sworn. Examined by *Mr. Jervis.*—I am an engineer, and have had, since I entered my father's establishment, about thirty-five years' experience; I have read Galloway's specification. The engine described is a reciprocating engine, although it is contained in the shape of a rotary, and certainly it is one of the worst I ever saw. I have examined the plan and specification of the paddle-wheel; I could not from the specification and drawing make wheels to enter and leave the water at different angles to that shown in the plan; there is not a clue to where even, what is termed, the crank should be placed, or what the lengths of the bent-stems should be.

Mr. Baron Alderson.—The drawing contains, as I understand it, certain rods which are not exactly of the same length.

Witness.—I have not measured them, my Lord, because I have not the information that would be necessary. If I were going to set out a wheel to enter and leave the water at different angles, I should set about the thing *de novo*, but what course I should take till I came into Court yesterday, I did not know.

Cross-examined by *Sir F. Pollock.*—The specification does not state that the angle should be changed; I have a right to presume that this is the best angle, it gives no illustrations how to vary it; after my attention was called to this point yesterday, I, at a late hour last night, read the specification over a dozen times, and I could find no clue whatever; I have considered the thing, and all the information I have on this subject is certainly what I gleaned here yesterday, and which would most likely result to myself, had I sat down for the purpose and considered it. I do not agree with Mr. Donkin, that a man with a moderate quantity of geometry could do it;

Seaward et al.

I think geometry is quite a secondary point; I do not think a man would have any great difficulty, having two or three points given him, to find a fourth; I should not think of setting a man to superintend the making of these wheels, unless he had some knowledge of geometry and mathematics.

Joseph Tunnicliffe sworn. Examined by *Mr. Jervis.*—I am a working engineer; I was employed by Mr. Morgan in 1830; I remember a pair of engines on Galloway's plan being put into the Flamer; they would not work; the number of revolutions varied from twelve to twenty; they run a certain time, then stopped, and then went on again; we attended them after the first trial, but they ultimately failed, and I was employed to take them out; they were, I believe, afterwards sold at Morgan's sale; I have never heard of their having been tried since. I was employed in making the third and fourth, but not the first and second wheels, that were used in the Confiance; the third set broke down somewhere in the Downs; they did not last a month. The fourth set were fitted to the Confiance; I went to the Mediterranean with them; they worked a year and three months.

Cross-examined by *Sir F. Pollock.*—I was in the Portland Roads in the year 1830, in the Confiance, which had the fourth set of wheels on; they were constructed with a crank in the centre of the wheel, and having a boss working round. The float-boards were on the outside of the centre; they worked admirably well; the sea was tremendously rough a-head; we were weather bound in the Portland Race for several days; the wheels remained as sound as when we left Woolwich; they were constructed similar to that drawing.

Mr. Baron Alderson.—That is Galloway's patent.

Sir F. Pollock.—Yes, precisely as the drawing.

John Barnes sworn. Examined by *Mr. Alexander.*—I was in France in 1828; I was fitting a pair of engines to a boat; I remember a race on the Seine, between the one I fitted up and another boat; the paddles on the vessel that opposed were made by M. Cavé; they were as nearly as possible the same as that model (Seaward's); they are well known as Cavé's wheels; he never made any other kind; I think the 10th of May, 1828, was the day of the race; there was a steam-boat plying between

Morgan et al.

Dover and Calais, two or three years after that, furnished with similar wheels.

Mr. Baron Alderson.—You do not prove anything beyond that?

Mr. Alexander.—Not by this witness, my Lord.

Cross-examined by *Sir F. Pollock.*—I do not recollect when it was the vessel with Cavé's wheels first plied between Dover and Calais; I think it was since the date of the patent; I do not know the time to a year or two.

Horatio George Williams sworn. Examined by *Mr. Jervis.*—I was at work at Rouen in 1828; I saw an iron steam-boat plying there with Cavé's wheels; there were thirty or forty English workmen there.

Mr. Baron Alderson.—Unless you can bring this over to England, it certainly comes to nothing.

Mr. Jervis.—That we cannot do.

Mr. Alexander.—We have not evidence to bring it to England, but the question may be, whether it was possible that it may have been seen by others.

Mr. Baron Alderson.—It is possible or not that Mr. Galloway may have seen it and imported it, and it is possible he may have invented it at the same time with Cavé, but all this is beside the question; it does not signify which it is; if he imported it, he has a right to be considered for this purpose the same as an inventor.

Mr. Alexander.—We have several witnesses who can speak to the defendants' not being an infringement on the plaintiffs'.

Mr. Baron Alderson.—You have a right to call as many witnesses as you please on that point, but I know what I think with respect to that.

The Foreman of the Jury.—What is the point?

Mr. Baron Alderson.—Whether or not you think the defendants' wheels are an infringement on the plaintiffs' patent, supposing the patent to be a good one; that is to say, is the principle of it the same, or is it not?

The Foreman.—We are decidedly of opinion they are the same.

Mr. Baron Alderson.—So I think; the judge and the jury are agreed upon that.

Mr. Alexander.—That is the case on the part of the defendant, my Lord.

Seaward et al.

Mr. Baron Alderson.—*Sir F. Pollock*, it appears to me, you need not trouble yourself on the subject of any infringement; that must be found for you; there are two or three questions I should like to ask the jury first; have you any doubt whether a workman of ordinary skill could make the machine—have you any doubt about it, gentlemen?

The Foreman.—We have not.

Mr. Baron Alderson.—Then with respect to the utility of the steam-engine, that is a point to be discussed.

Sir F. Pollock.—Gentlemen, I must say, notwithstanding the extraordinary solemnity and pomp with which my learned friend the Attorney-General commenced his address, I think this is one of the most impudent and fraudulent attempts to get rid of a patent that I ever experienced. The manner in which the witnesses one after another have contradicted each other is so extraordinary, that I have rarely experienced the degree of pain with which I address you on the present occasion. Some years ago, in the cause of *Severn* v. *Olive*,* there were a great many trials and many experiments made; and I remember *Lord Chief Justice Dallas*, who was himself no inconsiderable chemist, at the close of the trial making the observation, that he was ashamed that party spirit and contention in the cause had travelled beyond jockeys in a horse cause: there being placed on the one side some of the highest names in the roll of science and in practical experience in the kingdom; there being on the other a long bead-roll of names equally respectable, many of which will go down to posterity as ornaments to the country where they were born; the whole set of witnesses on the one side swore, Aye, the whole of them on the other side swore, No. And it is melancholy to hear witness after witness come in the spirit of party, with a degree of zeal, infused into the individual. I mention no names; there is hardly a gentleman who has been called towards whom I am not disposed to entertain considerable sentiments of respect; but they do present very extraordinary testimony, utterly irreconcileable with each other, and, therefore, all cannot be reconcileable with the truth. Mr. Donkin said, in his examination, "the mathematical principle of the two inventions is precisely the same;" but that "the mechanical expedients

---

* 3 B. & B. 72.

Morgan et al. v.

of combination are different in each;" but when I cross-examined him, he admitted that the mechanical expedients in both were used to produce what are called mechanical equivalents. From that moment the question of infringement was gone. Mr. Brunton said he had not examined the plans, but had the courage to say that Galloway's wheel was not useful. What! when it was working between Trieste and Venice. When their own witness, whose letters I produced, spoke of being a fortnight or three weeks, in the worst weather, in the Race of Portland, with paddles upon this very construction, and in exact accordance with the specification, stated that they worked perfectly well a considerable time, and retained their soundness to the last. What are we to say, gentlemen, of a case that is made up of this sort of mosaic work—contradiction. After the evidence of the nautical men, it is too much for Mr. Brunton or Mr. Hawkins to come here and swear they have glanced over the specification, and that it is not useful. I think I have sufficiently proved the infringement, and also the utility and identity; but I cannot help calling your attention to the still stranger discrepancy on the subject, as to whether the paddle can be made from the specification. The witnesses for the plaintiffs said that there was not the slightest difficulty. I produced witness after witness, young and old, engineers and workmen, some more practical, some less, but every one had done it, and said it was perfectly easy, and my Lord set us a puzzle to make the float go in at 30 deg. and come out at 60 deg. I produced a small model, which was prepared this morning, producing those angles, which you never could want, as they would be perfectly useless. The limits within which any alteration of the angles would have to be made are so small, and completely under the control of any workman of common skill, that it required but the man to sit down with a willing mind to do it immediately. And Mr. Donkin said, "Any person moderately acquainted with geometry may do it;" and it strikes me, gentlemen, and Mr. Donkin admitted it, that every person who meddles with the making of wheels of this sort ought to be moderately acquainted with geometry. Then came Dr. Lardner; now, if you understood the kind of difficulty he had to present to you, you were more fortunate than I was. I was willing to oppose the learned Doctor's book to the learned Doctor's evidence, and I think the substance of

-Seaward et al

his explanation was this, that with respect to the facts I have stated I got them where I could,—some from the magazines and some from Mr. Morgan. The book was published, and he was puffed off as the author of it,—it is part of his pretensions to be learned with respect to it; he says, "I won't pledge myself; I know rather more about the subject now, and I do not stand by my book." Professor Barlow said, "Get me over the difficulty of the length of the crank, and there will be no difficulty afterwards." Why, what do the practical men say? "Get us over the geometry, and there is no difficulty in the details of the mechanical parts." Mr. Donkin, jun., admitted, though with great hesitation and reluctance, that workmen to be employed in making paddles should have knowledge enough for that particular purpose. Then, gentlemen, came the two Bramahs, both of whom I have personally known for many years, and whose testimony on this subject, I do rejoice to say, is not of the character of some of the rest. Mr. Timothy Bramah said he had paid no attention to the wheel; he had been examined in the Court of Chancery only on the engine. I saw the design with which he was put into the box, I asked him to say he knew nothing about it, and could not do it. Mr. Bramah would have been very much ashamed to have given that answer: if you had called upon him and given him an order for two or three dozen wheels, it would have been done in a moment; but all my learned friend wanted was his ignorance and his reluctance mixed together, as also that of his brothers; they were merely required to decorate the witness-box; they admit they never attended to the subject till the point was started yesterday; and I ask whether that is evidence on which you ought to rely; because till they paid attention to the subject, they could know nothing about it; and I do not think when a witness's attention is called to it after a trial has begun, that that is a favourable mode of getting at an accurate result. Mr. Collinge was also called for the same purpose as the Bramahs: he stated, in reference to the paddle, "As to the thing generally, I have very little doubt that I would find it out, the angle being given;"—but when he was asked if he could alter the angle, he said, "I do not know whether an ordinary workman could do it or not: I would try to do it, if I had an order; but, in short, I know nothing about it." And, gentlemen, this is the

Morgan et al. v.

whole of the evidence fairly put to you on behalf of the defendants. Why, if I stood on that alone, with the testimony of Mr. Donkin, it would be sufficient to prove that any person who brought a competent share of skill and judgment would be able to do it. The next point upon which I will require your attention, is the supposed circumstance which destroys the patent by what was said about a sale. You remember the manner in which the learned Attorney-General stated in a triumphant tone that the machine was made, the machine was seen, the machine was sold, the machine was used, when, where, and by whom: they were packed in separate pieces, under strict injunctions of secrecy, and sent to Trieste, by Mr. Morgan, and there put together, and tried for the first time; there is not the slightest evidence of a sale,—no date, no circumstances, a sale without any bill of parcel, without any payments, without any order or communication; the only evidence was in an accidental expression coming from a witness, who could have known nothing of it, even had a sale been made. There were a great many points, and you will well recollect in the last words which my learned friend addressed to you, he enumerated the substance of the questions you have to try; first, have the defendants infringed the patent? Now, my learned friend said he expected your verdict most confidently upon all the points. Now I expect your verdict most undoubtedly upon every point, except that which my Lord withholds from your consideration. The next is, is the specification sufficient? My learned friend was rather ashamed of this bringing in of the steam-engine, which has nothing to do with the case, and while professing to have nothing to do with prejudice, raised the prejudice about monopolies. The next question is, is the steam-engine new? Can any one doubt it? do not all the witnesses say it is new, and have we not had it actually in work? But just as about the paddle-wheel being useful, "I do not care about that—it is not useful. I have my own opinion about it, and I don't care about any man's facts." Say the engineers, This is not useful; and in vain do I put in answer not less than six witnesses, all proving that the engine was on that principle, that people admired it, and that finally it was sold and no other made, because Mr. Morgan unfortunately failed. Can you doubt that that steam-engine was new? Can you doubt that it was useful? Then I think the last is, that Mr. Galloway's

Seaward et al.

invention was not new. Now, whether that includes the question as far as the objections are concerned, is a point which his Lordship reserves.

Mr. Baron Alderson.—I do not think there is any evidence, but as to the one. I am not aware that there is any evidence whatever as to both the inventions not being new, because they have totally failed in showing that Cavé's paddle was known in England.

Sir F. Pollock.—Then I have done; and I cannot help, at the conclusion of the cause, expressing somewhat of a deep and bitter regret, and presenting a sort of apology to my client, that with all the industry and zeal I may have used, I have given to the cause the single point of the patent, arising out of an answer of one of the witnesses on a fact that he could not know. But I leave that in the hands of his Lordship, confident of your verdict upon every point; and I cannot sit down without expressing my deep regret, that in a case which is so clear on every other point, the only doubt should arise upon the matter in that way, because it was considered by me as a matter of very little importance.

Mr. Baron Alderson.—I think, gentlemen, this case lies within a very narrow compass. The plaintiffs complain of the defendants for infringing their patent; the defendants make several defences; the first that they did not infringe the patent. Upon that fact you have expressed your opinion, that you have no doubt about it, that the one is an infringement of the other, the principle of which would be simply whether the defendants' machine either differed colourably, or only in those things which were mechanical equivalents, the one for the other. Now, I think when you are told what the plaintiffs' invention really is, you will see that those differences which Mr. Donkin and others pointed out as the differences between the one machine and the other, are, in truth, differences which do not affect the principle of the plaintiffs' patent at all. The two machines are alike in principle, and the one who made the first invention of that, suggested the principle to the other; though he may have carried it into effect by substituting one mechanical equivalent for another. You are to look to the substance, and not to the mere form. If in substance it is an infringement of it, you ought to find it so; but if you think that in substance it is not the same, if it was in

Differences in detail do not necessarily constitute difference of principle as respects an invention

A resemblance in substance constitutes an infringement but not so a resemblance in mere form

Morgan et al v.

principle really different, then you will find it not to be an infringement, though it might have a resemblance in its parts. Then the next point is, whether or not the specification which Mr. Galloway filed at the time when he obtained his patent, is or is not a valid specification. The third is, that the invention of the steam-engine is not an improvement in steam-engines. The fourth is, that the invention of paddle-wheels is not an improvement in propelling vessels. Now as to that there can be no doubt, when you are told by evidence which could not be contradicted by the other side, that the effect of this improvement in the management of the paddles of these wheels has been to increase the speed of the steam-boats from a knot to a knot and a half an hour, and to make them more manageable in bad weather than before. With respect to the other, the fifth, I have already intimated to *Sir F. Pollock* that in all respects it appears to me this invention is new; and the only question as to whether it is to be considered new in point of law, depends on a mere question of law, arising out of undisputed facts which appear on my notes. If in the results of the case, those facts being stated to the other Judges of the Court, shall appear to them as they appear to me, to be facts which will admit of no dispute, and on which I ought to direct you to find your verdict for the defendant; if I am wrong in the opinion which I have now expressed, and the other Judges should set me right, and should be of opinion that it is a proper question to be left to the jury, I cannot put it more favourably for the plaintiffs than by presuming that you would find a verdict for the plaintiffs. Therefore, for these reasons, you will find the fifth issue for the defendants, subject to be set right, and having your decision reversed and placed as a decision for the plaintiffs, unless you object to it. Then the sixth is in substance that the invention, which includes both, is of no use. Now I apprehend that that means, as at present advised, that I should direct you in that way that this issue cannot be found for the plaintiffs, unless you are satisfied that both the steam-engine and the machine for propelling vessels are of use. It is clear that the paddle is of use. On the subject of the steam-engine there is a contradiction of evidence; the issue, therefore, upon the third, which states that the invention is not an improvement in steam-engines, and the sixth, which states that the invention is of no use, are in

Seaward et al.

my judgment precisely the same; therefore, if you find the one, you will find the other for the plaintiffs. The questions, therefore, for your consideration, which are, properly speaking, none of doubt, are the questions on the specification, and the question whether the steam-engine is a useful invention. It is the duty of the party who takes out a patent to specify what the nature of his invention really is, because it is of the greatest importance to the public that patentees should fairly state in their specification the real nature of their inventions, and also how they can practically be carried into effect, in order that the public may know what is prohibited ground, and what is not, because that is the premium which the patentee pays for the monopoly which he receives. Now the question really here is, whether or not this party, Mr. Galloway, has done so in the specification which he has filed, and which is accompanied by drawings, and which drawings you ought to take as part of the specification; and if you can make out a clear and plain specification from either or both together, you are at liberty so to do. He has stated two inventions. If either of the inventions are improperly and insufficiently specified, the patent would fail; because if a person puts himself to the hazard of putting two inventions into one patent, he could not hold the patent as valid unless both inventions could be supported as separate patents. Now in order to support each as separate patents, an invention must be new, must be useful, and must be specified in such a manner as that people would clearly know what the invention is, and how it is to be performed. That must apply to this patent, that is to say, to the invention of the steam-engine, and the machinery for propelling vessels. That being the case, has he sufficiently described the steam-engine, so as to enable any one to know what it is he has invented, and so as to enable a workman engaged in that branch of business to make it? not by any invention of his own, but by following the specification, without any new invention or addition. You have no right to tax invention or ingenuity to do any thing which is not in the specification. It is a fair observation to say that both parties stand here upon a footing of perfect equality. The public, on the one side, have a right to the specification being fair, and honest, and open, and sufficient, and, on the other hand, the pa-

Duty of patentee in reference to Spec. & public advantage of its proper discharge—

In the case of a patent containing two inventions either of them as described in the Spec. must be capable of sustaining a patent by itself

bearing on good faith

d.o —

Morgan et al. v.

The specn ought to be practically intelligible to competent persons on the application of their ordinary knowledge to its description & drawings without the aid of any unusual skill

The best mode known of accomplishing the invention shd be stated

Criterion of sufficient specn

tentee should not be entrapped by captious objections to the specification, not going to the merits of it. That is the fair way of viewing it; and if you, in the result, shall think this has been so specified, as that any engineer, having the ordinary knowledge which competent engineers ought to possess, would be able to make the inventions from specifications and drawings alone, then the specification is sufficient; but if, on the other hand, you think that competent engineers would have to set themselves a problem to solve, and we be required to solve that problem, then it is not a good specification, and you ought to find for the defendants. There is another circumstance which you are to consider. If a patentee is acquainted with any particular mode by which his invention can be most conveniently carried into effect, he ought to state that. This law was laid down in a case relating to a patent for steel trusses, by *Lord Mansfield:* it was also laid down in the case of *The King* v. *Wheeler*,* and I propose the application of the same law in this case. I do not think with respect to the steam-engine, I need sum up this part of the case: I think it is clearly made out that that is done. The defendants put in a model which would not work (and which they said was a copy of the drawing), because one of the parts of the drawing happened to be a little degree too small to enable it to work; if it had been a little larger, it would have been able to work. Then a workman of ordinary skill, when he is told to make two things, and that they shall move, he would of course make them of sufficient size to move; that is within the ordinary knowledge of every workman, if he finds a part too small, he knows by making it a little larger it will do. That is such a specification that a man of ordinary and competent skill would be enabled to make a machine by. With respect to the other, and that is the main question, there is more difficulty. The specification clearly states that the invention consists in enabling a party to use paddle-wheels for propelling vessels, and adjusting those paddles in such a way as that they may enter and come out of the water in positions the best qualified for giving effect to the power of the engine. It appears from his statement that the question of what was the proper angle was a subject of considerable doubt; that he does not profess to set down the best

---

* Vol. i. p. 394.

Seaward et al.

angle; but he says he will give a method of enabling paddle-wheels to enter and come out of the water in positions best qualified to give effect to the motion of the vessel. The only observation which seems to me to be material is this, that in his specification he gives no dimensions; he fixes no points either for the eccentric or the crank to which the eccentric centre is attached; and if, therefore, this can only be ascertained, in order to carry into effect his invention by experiments, that would be an insufficient specification. Now the whole turns in some degree necessarily on the position of the centre of the eccentric; and the question is, whether, in the absence of any statement of any dimensions which are stated in the specification, and any directions given for finding the centre of the eccentric in any given case, you think the specification is sufficient or not. Now that depends on the result of the evidence. You and I cannot determine the question. Mr. Brunel says, that from the specification he could construct a machine to any required angle without difficulty; but it is not what Mr. Brunel can do, but what an ordinary workman could do. Mr. Parke also gives similar evidence; but the question is, could he with his present ordinary knowledge, at the time the specification was enrolled, without the peculiar knowledge which he has obtained, from being employed to make models on behalf of Mr. Morgan, construct the machine to any angle? If he could, I agree that his evidence would be entitled to the greatest reliance. I certainly do think it would have been a vast deal better, if the specification had given us the same information which Mr. Parke has given in his evidence. Do you think that the important information contained in Mr. Parke's evidence should have been all left out of the specification? This is one of the questions for your consideration. To ascertain many of the points given in his evidence, I am to go through a series of experiments. It was never intended that a specification should require a series of experiments to be made for the purpose of enabling the public to come at the meaning of the specification, and the question really is, whether you think that this specification does fully, fairly, and properly, give to the public that information which they are entitled to receive. I think you ought to give a liberal construction in that respect in favour of the public, because I do think it is of the highest importance that patentees should be

The omission of any statement or direction material to the carrying into effect of the invention is fatal to the Specn.

The capabilities of a competent workman and not of a scientific witness the test for the Specn.

Value of evidence of scientific witness depends upon whether it proceeds from his ordinary knowledge or from that specially acquired.

Specn shd obviously contain that which scientific witness alleges it to contain

Experiments shd not be needed in order to make Specn clear.

Public entitled to adequate Specon

Morgan et al. v.

told that they must correctly and fully state what their invention is, and how it is to be done, in order that the public may understand how the invention is to be effected after the expiration of the patent. Mr. Carpmael, Mr. Cottam, Mr. Clement, and others, fully confirm the evidence of the preceding witnesses. Then young Mr. Mornay, who is in the employ of Mr. Morgan, states, that if there be more than three floats, in order to make them enter at the same angle, that it is found necessary to make the rods of different lengths. Now if that be so, it ought to have been stated in the specification; but the specification is totally silent on the subject, and, therefore, any person reading the specification would never have dreamt that other floats must be governed by rods of another length, and least of all, could he be enabled, till he made experiments, to ascertain what the length of those stems should be; and I own it appears to me, that with respect to that circumstance, the specification does not wholly and properly disclose to the public the manner of accomplishing the invention; and this is the point I called your attention to before, as laid down by *Lord Mansfield*. Now, gentlemen, having gone through the evidence of the plaintiffs, I will read you the defendants' evidence, and you will see whether it is evidence upon which you think you ought to come to any reasonable conclusion, one way or the other. Now Mr. Donkin says, on reading the specification, I think it defective; in my judgment, a workman ordinarily skilful would not be able to find out any mode of obtaining the required angle; he says, a geometrician might have discovered the mode of doing it. It requires to be ascertained by experiments, by a diagram, whether the adjustment is to be made by altering the bent stem, or by varying the length of the rods, and the points where they are attached to the disc. There is nothing except the drawing in that respect to take it from. Why, what are all these but experiments which the workman is required to make, to ascertain how the thing should be done? All the experiments ought to have been in the specification. Then he says, that the reason the model of the engine would not work was, that it was constructed on an improper principle; and, on cross-examination, he says, "I think a competent workman would do it, if he made the discovery; but unless a careful investigation is gone into, I do not think I could

Every circumstance
bearing an important
relation to the
subject matter
ought to be stated in
the Specn with
reference to such
relation –

Conflicting
testimony
of scientific
witnesses

Seaward et al.

have discovered how to make the engine." Then he says, "Few ordinary workmen would be able to get the required angle: I think I could; I think my foreman could; I think a person moderately acquainted with geometry might do it." You are to judge whether his evidence is to be relied on; and if relied on, whether it makes out the proposition. Dr. Lardner says, that from the specification, he does not think an ordinary workman could be able to construct the machine. "I am not sure whether I could do it now," he says; "it is an extremely difficult problem." I confess his solution of it exceedingly embarrassed me, for I did not understand it at all. Mr. Brunton says thus: "I think an ordinary workman, with competent skill, could not construct a machine so as to have the floats to enter at any angle, if it were required to make the paddle at an angle differing much from the drawing; it would be an exceedingly difficult task, and I am not prepared to say that I could do it; and I consider that a wheel constructed on Galloway's plan would not be useful." He says, that Seaward's is not an infringement, and he gives as his reason that there is no bent-stem. I think that is a very bad reason; he says they communicate with the machine by a drag-link; he says they are all moveable-rods, which makes them, as it appears to me, and as no doubt it appears to you, quite the same. Then Mr. Hawkins says, "I do not think a workman of ordinary skill could, from the plan and specification, make a wheel which should enter and quit the water at different angles from that given in the drawing, unless he possessed considerable ingenuity for inventing the mode of ascertaining the proportions of the machine itself." Professor Barlow says that there is not sufficient data to ascertain the angle: he says, "I do not think it could be done by guess-work; but a man of tolerable skill might do it." John Donkin says: "I should have considerable difficulty in altering the paddle-wheels to suit another angle; I doubt whether I could do it. An engineer ought to possess sufficient acquaintance with geometry to be able to do it." Mr. Timothy Bramah says, that he thinks he could discover it, but he does not know at present how to do it. The first time he attempted it was yesterday. Francis Bramah says, "I have examined the specification. I could not make the machine from the specification. I never saw it until I

Morgan et al. v.

came into Court yesterday." [There were other witnesses, whose evidence was not important on the points in question.] Gentlemen, I have now gone through the evidence on both sides, and it resolves itself into this, do the witnesses on the plaintiff's side satisfy you that the patentee has in his specification given a method of making the machine at any angle which may be required, so that an ordinary workman, with competent skill, and with the ordinary means of knowledge which artisans possess, might make the machine from that alone, without finding out a method of doing that which has not been specifically described in the specification; if you think he has, then the specification is good, and you will find a verdict for the plaintiffs; but if he has not, the specification is bad, and you will find for the defendants.

The jury returned a verdict for the plaintiffs, as respected the paddle, reserving the point as to whether there had been a sale previous to the date of the patent; and for the defendants as regarded the steam-engine, it not being an useful invention.

The verdict was therefore entered for the plaintiffs on all the issues except the third, fifth, and sixth, with leave to the plaintiffs to apply to the Court to have the fifth issue entered for the plaintiffs, and separate rules were obtained by the plaintiffs and the defendants in the following term.

MORGAN AND ANOTHER *v.* SEAWARD AND OTHERS.

In the Court of Exchequer.—Hilary Term, 1837.

The plaintiffs had obtained a rule *nisi* to show cause why judgment should not be entered for the plaintiffs, *non obstante veredicto*, on the third issue, and why the verdict entered for the defendants on the fifth issue should not be set aside, and entered for the plaintiffs.

Sir F. Pollock, *Sir W. Follett*, and *Mr. Butt*, for the plaintiffs; and *Mr. Attorney-General* (*Campbell*), *Mr. D. Pollock*, *Mr. Alexander*, and *Mr. Jervis*, for the defendants.

Seaward et al

This rule now came on to be argued, and on the part of the defendant, the Learned Counsel contended that if the invention claimed under the patent was not useful, the patent would be void, for the Crown granted the patent on the condition of the invention being new and useful; if therefore it was not useful, the Crown had been deceived, and the consideration for the grant would fail. In all the cases, utility had been considered a necessary condition, citing *Edgeberry* v. *Stephens*,[*] *The King* v.[†] *Arkwright*,[‡] *Boulton and Watt* v. *Bull*,[§] *Bovill* v. *Moore*,[||] *Manton* v. *Manton*,[¶] *Walker* v. *Congreve*,[**] *Hill* v. *Thompson*,[††] *Bloxam* v. *Else*,[‡‡] *Lewis* v. *Davis*, *The King* v. *Wheeler*.[§§] The jury had found that the steam-engine was not useful; it therefore followed that if the patent was bad in part, it was void altogether, citing *Hill* v. *Thompson*, *Brunton* v. *Hawkes*.[||||] Then, again, in respect to the fifth issue, the patent was void by reason of the wheels made by Curtis, and sold to the Trieste Company by the plaintiff before the date of the patent, citing *Wood* v. *Zimmer*.[¶¶]

On the part of the plaintiff it was argued in support of the rule that it was not necessary that the invention should be useful, the statute only required novelty, and it had been held that part of an invention claimed as new in the specification of a patent which turned out not to be useful, did not injure the validity of the patent, citing *Lewis* v. *Marling*.[***] There had been no case decided where a patent had been set aside by reason of part of the invention claimed not being useful, there could be no doubt taking this patent altogether, a very valuable and new invention had been brought out, and it would be hard indeed if a defendant, having infringed that part of the patent, should be allowed to defend himself on the ground that another part of the patent, though new, was not useful. Then in respect to the supposed sale before the date of the patent, the evidence did not show any public use; the public never had any possession of the invention. The wheels were made for experiment by an

---

[*] Vol. i., p. 35.
[†] Vol. i., p. 53.
[‡] Vol. i. p. 117.
[§] Vol. i., p. 320.
[||] Vol. i., p. 278.
[¶] Vol. i., p. 356.
[**] Vol. i., p. 369.
[††] Vol. i., p. 434.
[‡‡] Vol. i., p. 471.
[§§] Vol. i., p. 394.
[||||] Vol. i., p. 405.
[¶¶] Vol. i., p. 290.
[***] Vol. i., p. 475.

Morgan et al. v.

engineer, at the order of Morgan and Galloway; they were to be kept as secret as a work of the kind could be; and in fact they were never worked even abroad till after the date of the patent.

Mr. Baron Parke subsequently delivered the judgment of the Court as follows:—This was an action brought by William Morgan and James Lancaster Lucena, the licensee and assignee of a patent from Galloway, the patentee, against Seaward and others, for an infringement of the patent. The suggestion in the declaration is, that Galloway had invented certain improvements in steam-engines and in machinery for propelling vessels, which improvements are applicable to other purposes; and then it goes on to state an infringement by the defendants. There are several pleas to this declaration. The first plea is "not guilty," on which a verdict was found for the plaintiff. The second plea is, "that there was no proper specification," on which there was a verdict also found for the plaintiff. The third plea is, "that the alleged invention in the declaration mentioned, and in the letters patent and instrument in writing in the declaration mentioned and described and ascertained, is not an improvement in steam-engines:" that was found for the defendants. The fourth was, "that the said alleged invention in the declaration mentioned and described, was not an improvement in machinery for propelling vessels:" that was found for the plaintiff. The fifth plea was, "that the alleged invention in the declaration mentioned and in the letters patent and instrument in writing in the declaration mentioned, described, and ascertained, was not at the said time when the said letters patent were granted, as in the declaration mentioned new:" that was found by the direction of the Learned Judge for the defendants. The sixth plea was, "that the said alleged invention in the declaration mentioned, and in the said letters patent and instrument in writing in the declaration mentioned, described, and ascertained, was and is of no use, benefit, and advantage to the public whatever:" that also was found for the defendants, but the Learned Judge directed that the verdict on that ought to be amended according to his notes, and that it ought to be a divided issue on that, it being found to be of no use so far as related to the steam-engine, but of use so far as related to the remainder of the patent.

Seaward et al.

This case was argued before my Brother *Bolland*, my Brother *Alderson*, my Brother *Gurney*, and myself in the course of the last term.

The first question in this case is, whether the verdict for the defendant on the fifth plea ought to be set aside and a verdict entered for the plaintiff pursuant to the leave reserved by my Brother *Alderson*. Unless this question should be disposed of in favour of the plaintiffs, it would be unnecessary to consider whether the plaintiffs be entitled to judgment *non obstante veredicto* on the third and sixth pleas, for if the verdict on the fifth plea were to remain undisturbed, that would be an answer to the action.

The course which was taken with respect to this plea on the trial, was to ascertain the facts upon which the Learned Judge gave his opinion in favour of the defendant, but at the same time reserved liberty to the plaintiff to move to enter a verdict in his favour if the Court should be of opinion that the facts ought to have been left to the jury; that is, that the facts were such, that the jury might infer from them that there had been no use or publication, in the ordinary use of the language, of the invention so as to destroy the novelty of the patent. The evidence was, that before the date of the patent, which was the 2d of July, 1829, Curtis, an engineer, made for Morgan two pair of wheels upon the principle mentioned in the patent, at his own factory. Galloway, the patentee, gave instructions to Curtis, under an injunction of secrecy, because he was then about to take out a patent. The wheels were completed and put together at Curtis's factory, but not shown or exposed to the view of those who might happen to come there. After remaining a short time, the wheels were taken to pieces, packed up in cases, and shipped in the month of April, on board a vessel in the Thames, and sent for the use of the Venice and Trieste Company, of which Morgan was the managing director, and which carried on its transactions abroad but had shareholders in England. Curtis deposed that the wheels were sold to the company, without saying by whom, which may mean, that they were sold by Curtis to Morgan for the company, and Morgan paid Curtis for them. Morgan and Galloway employed an attorney, who entered a caveat against any other patent on the 2d of March, and afterwards solicited the patent in question, which was granted to Galloway and assigned to Lucena.

The following circumstances ocur before the date of a patent were insuffi to be construed as "public use." The patentee gave instructions to an Engineer to manufa the subject of the inv under injunction of secrecy. it was so manufactured & paid for by a managing director of a compa trading abroad: it was taken to pieces & shipped & sent to be used abroad. The previous sale under these circumstances was not held to be a publication, because although the managing director of the company had the invention communicated to him yet it was so done confidentially on the understanding that a patent was to be taken out & the managing director was at the time connected with the patentee [illegible] to the prospective patent. The managing director paid [illegible] for the article [illegible] the priority of the patentee so that it may be taken as a sale entirely for [illegible]

Morgan et al.

Upon these facts the question for us to decide is, whether the jury must necessarily have found for the defendants, or whether they might have found that this invention, at the date of the letters patent, was new in the legal sense of that word.

The words of the Statute of Monopolies are, "that grants are to be good of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor or inventors of such manufactures, which others at the time of making such letters patent and grants shall not use;" and the proviso in the patent in question founded on the statute is, that if the invention be not a new invention, as to the public use and exercise thereof in England, the patent shall be void. The word "manufacture," in the statute, must be construed in one of two ways. It may mean the machine when completed, or the mode of constructing the machine. If it mean the former, undoubtedly there has been no use of the machine, as a machine in England, either by the patentee himself or any other person, nor indeed any use of the machine in a foreign country before the date of the patent. If the term "manufacture" be construed to be the mode of constructing the machine, there has been no use or exercise of it in England in any sense which can be called public. It was constructed under the direction of the inventor, by the engineer and his servants, with an injunction of secresy on the express ground that the inventor was about to take out a patent, and that injunction was observed; and this makes the case so far the same as if it had been constructed by the inventor's own hand in his own private workshop, and no third person had seen it while in progress. The operation was disclosed indeed to Morgan the plaintiff, but then there is sufficient evidence that Morgan at that time was connected with the inventor, and designing to take a share of the patent. A disclosure of the nature of the invention to such a person under such circumstances, must surely be deemed private and confidential. The only remaining circumstance is, that Morgan paid for the machine with the privity of Galloway, on behalf of the Venice and Trieste Steam Company, of which he was the managing director, but there was no proof that he paid more than the price of the machine, as for ordinary work of that description, and the jury would also be well

Definition of word "manufacture"

Seaward et al.

warranted in finding that he did so with the intention that the machine should be used abroad only by this company, which as it carried on its transactions in a foreign country, may be considered as a foreign company, and the question is, whether this solitary transaction, without any gain being proved to us derived thereby to the patentee, or to the plaintiff, be a use or exercise in England of the mode of construction in any sense which can be deemed a use by others, or a public use within the meaning of the statute and the patent. We think not. It must be admitted that if the patentee himself had, before his patent, constructed machines for sale as an article of commerce or gain to himself, and had been in the practice of selling them publicly to any one who would buy, the invention would not be new at the date of the patent. This was laid down in the case of *Wood* v. *Zimmer*,* and appears to be founded on reason, for if the inventor could sell his invention, keeping the secret to himself, and when it was likely to be discovered by another, take out a patent, he might have practically a monopoly for a much longer term than fourteen years; nor are we prepared to say that if such a sale was of articles that were only fit for a foreign market, or to be used abroad, it would make any difference—nor that a single instance of such a sale as an article of commerce to any one who chose to buy, might not be deemed the commencement of such a practice, and a public use of the invention so as to defeat the patent. But we do not think that the patent is vacated on the ground of the want of novelty and the previous public use or exercise of it by a single instance of a transaction such as this between parties connected as Galloway and the plaintiff are, which is not like the case of a sale to any individual of the public who might wish to buy, in which it does not appear that the patentee has sold the article, or is to derive any profit from the construction of the machine, nor did Morgan himself, but in which the pecuniary payment may be referred merely to an ordinary compensation for the labour and skill of the engineer actually employed in constructing the machine. The transaction might, upon the evidence, be no more in effect than that Galloway's own servants had made the wheels, that Morgan

Criterion of public user. Sale of article by patentee as an article of commerce before date of patent not excluding sale of articles fit only for a foreign market or to be used abroad nor yet a single instance of such a sale as foregoing.

Sale (single instance) when construable in the light of compensation to engineer for labour & skill does not constitute public user.

---

* Vol. i., p. 290.

Morgan et al. v.

had paid them for their labour, and afterwards sent them to be used by his own copartners abroad. To hold this to be that which is usually called a publication of the invention in England would be to defeat a patent by much slighter circumstances than have yet been permitted to have that effect. We therefore think that as the jury might consistently with the evidence have found on this issue for the plaintiff, the verdict ought, pursuant to the leave reserved, to be entered on that issue for him.

The next question is, whether the plaintiff be entitled to judgment *non obstante veredicto*, or a repleader upon the finding of the issue on the third or sixth pleas. The questions involved in these two issues are different. I propose to consider first that on the third plea.

The suggestions in the letters patent is, that Galloway had invented certain improvements in steam-engines and machinery for propelling vessels, which improvements were applicable to other purposes, and the patent is granted for the invention of those improvements. But unless the specification be referred to to explain the title of the patent, it is doubtful whether the invention claimed is an improvement in steam-engines, as connected with the other machinery only, or the improvements of steam-engines for whatever purpose they are employed. Upon reference to the specification, there is no doubt that the claim is of the latter description; but as that instrument is not stated on the record, and from what appears upon the record, it is by no means clear that the patentee does claim an improvement in steam-engines unconnected with the machinery; and if he does not, the plea would probably have been bad on demurrer, as it is uncertain whether it does not deny the invention to be an improvement in steam-engines unconnected with the machinery. But after verdict this objection is removed, for it is a rule that if an issue could have been material, the Court, after verdict, ought to intend it to be so. That is laid down in *Kemp* v. *Crewes;** and as the plaintiff did not demur, it must be taken that he admits that the plea is to be understood as denying the invention to be an improvement in steam-engines in that sense in which it is used in the patent itself, and the jury must be intended so to have found.

---

* 1 Lord Raym. 187.

Seaward et al.

This brings me to the question whether this patent, which suggests that certain inventions are improvements, is avoided if there be one which is not so; and upon the authorities we feel obliged to hold that the patent is void upon the ground of fraud on the Crown, without entering into the question whether the utility of each and every part of the invention is essential to a patent where such utility is not suggested in the patent itself as the ground of the grant. That a false suggestion of the grantee avoids an ordinary grant of lands or tenements from the Crown, is a maxim of the common law, and such a grant is void, not against the Crown merely, but in a suit against a third person, *Alcock* v. *Cooke.** It is on the same principle that a patent for two or more inventions, when one is not new, is void altogether, as was held in *Hill* v. *Thompson*,† and *Brunton* v. *Hawkes*,‡ for, although the statute invalidates a patent for want of novelty, and consequently by force of the statute, the patent would be void so far as related to that which was old, yet the principle on which it has been held to be void altogether, is, that the consideration for the grant is the novelty of all, and the consideration failing, or, in other words, the Crown being deceived in its grant, the patent is void.

When two or more inventions are contained in a patent the patent is void if one of them be old. The patent is for one entire consideration the novelty of the entire invention suggested in the title & is therefore wholly void by any false suggestion as to any part.

We cannot help seeing on the face of this patent, as set out in the record, that an improvement in steam-engines is suggested by the patentee, and is part of the consideration of the grant; and we must reluctantly hold that the patent is void for the falsity of that suggestion. In the case of *Lewis* v. *Marling*,§ this view of the case, that the patent was void for a false suggestion, does not appear by the report to have been pressed on the attention of the Court, or to have been considered by them, but the decision went upon the grounds that the brush was not an essential part of the machine, and that want of utility in part of the invention did not vitiate the whole, and besides the improvement in the brush is not recited in the title of the patent itself as one of the subjects of it, which might possibly make a difference. We are, therefore, of opinion that the defendants are entitled to our judgment on the second issue. It is a satisfaction to

Want of utility in an immaterial part of an invention will not vitiate especially when such part forms no part of the suggestion on which the grant is made.

---

* 5 Bing. 340. † Vol. i., p. 369. ‡ Vol. i., p. 405. § Vol. i., p. 475.

Morgan et al. v.

know that this objection will not destroy the patent, as the objection is one which may be removed by the Attorney-General under the 5th and 6th William IV., c. 83. This view of the case makes it unnecessary to consider the effect of the finding on the last issue, as amended by the Judge's notes, that part of the invention is not useful, which is a different question from that which we have disposed of.

A grant of monopoly for an invention which is altogether useless, may well be considered as mischievous to the State, to the hurt of trade, or generally inconvenient within the meaning of the Statute of James I., which imposes it as the condition of the grant that it should not be so, for no addition or improvement of such an invention could be made by any one during the continuance of the monopoly without obliging the person using it to purchase a useless invention; and on a review of the cases it may well be doubted whether the question of utility is anything more than a compendious mode of deciding the question, whether the patent be void under the Statute of Monopolies; and we do not mean to intimate any doubt as to the validity of a patent for an entire machine, or a subject which is, taken altogether, useful, though a part or parts may be useless, always supposing that such patent contains no false suggestion. Nor do we pronounce any opinion upon the sufficiency of this plea. In point of form it may be that the proper form of plea is to use the words of the statute, and not to plead the want of utility. For this reason our judgment must be for the defendants. The Attorney-General must now decide whether he will abide by this judgment or apply for a new trial.

The Attorney-General. — I am perfectly content to abide by your Lordship's judgment.

Mr. Baron Alderson.—Then the rule will be discharged.

On this judgment application was made by petition to Mr. Solicitor-General (*Rolfe*), under the statute, by James Lancaster Lucena and William Morgan, for leave to enter a disclaimer of parts of the title of the patent, and also of parts of the specification, so far as the same related to improvements in steam-engines, and also so far as related to improvements in machinery for propelling

Seaward et al

vessels, which were said to be applicable to other purposes.[*] At the same time they also, by a separate application, petitioned for leave to enter a memorandum of alteration with a

---

[*] The disclaimer was as follows:—

"In the matter of a patent granted to Elijah Galloway, of King-street, in the Borough of Southwark, engineer, for the sole making, using, exercising, and vending of his invention of Certain improvements in steam-engines and in machinery for propelling vessels, which improvements are applicable to other purposes, bearing date at Westminster, the second day of July, in the tenth year of the reign of his late Majesty King George the Fourth, to which said patent the said Elijah Galloway did enrol a specification, and the said letters patent, and all interest therein, have been assigned to and are now vested in James Lancaster Lucena, of the Middle Temple, in the City of London, Barrister-at-Law, who has granted to William Morgan, of Minerva-cottage, New Cross, in the county of Surrey, engineer, his executors, administrators, and assigns, license to use and practise for his and their benefit, the said patent invention during the remainder of the term granted by the said letters patent, rendering to the said James Lancaster Lucena certain sums of money or reservations.

"Disclaimer to be entered by the said James Lancaster Lucena, assignee of the said patent, and the said William Morgan, the possessor of the said license, with the clerk of the patents of England, pursuant to an Act passed in the fifth and sixth year of the reign of his late Majesty King William the Fourth, intituled 'An Act to amend the Law touching Letters Patent for Inventions.'

"Whereas the said Elijah Galloway, in the said specification, described his invention as consisting first, in an improvement of the steam-engine, whereby he was enabled to obtain a rotatory motion from the alternating action of the axis of a piston, which piston makes about three-fourths of a revolution within the steam cylinder;

"And secondly, in an improvement on paddle-wheels for propelling vessels whereby the float-boards or paddles are made to enter and come out of the water in positions the best adapted, as far as experiments have determined the angle, for giving full effect to the power applied; And whereas, the said invention, as relating to steam-engines has been deemed and adjudged not to be useful, and the validity of the said patent has been or may be thereby affected; And whereas the said James Lancaster Lucena and William Morgan have not, nor hath either of them, hitherto used for other purposes than that of propelling vessels, the said invention as relating to machinery for propelling vessels; We do therefore disclaim so much of the title of the said invention of the said Elijah Galloway, and of the specification thereof as relates to his improvements in steam-engines; and also so much of the title of the said invention as is contained in the words, 'which improvements are applicable to other purposes,' and so much of the said specification as relates to such other purposes.

"In witness whereof we, the said James Lancaster Lucena and William Morgan, have hereunto set our hands this fifteenth day of December, one thousand eight hundred and thirty-eight.

"JAMES L. LUCENA.
"WILLIAM MORGAN."

Morgan et al. v. Seaward et al.

view to give further information as to how wheels were to be constructed, and to enable a workman at once to be able without any thought to set out wheels with float-boards to enter and leave the water at any desired angles; this alteration consisted of a further drawing and description.* These applications were opposed by Messrs. Seaward, the defendants in the former proceedings, and Counsel were heard on both sides on the 8th November, and the 4th

---

* The memorandum of alteration was as follows:—

"In the matter of a patent granted to Elijah Galloway, of King-street, in the Borough of Southwark, engineer, for the sole making, using, exercising, and vending of his invention of Certain improvements in steam-engines, and in machinery for propelling vessels, which improvements are applicable to other purposes, bearing date at Westminster the second day of July, in the tenth year of the reign of his late Majesty King George the Fourth, to which said patent the said Elijah Galloway inrolled a specification. And the said letters patent, and all interest therein, have been assigned to and are now vested in James Lancaster Lucena, of the Middle Temple, in the City of London, Barrister-at-Law, who has granted to William Morgan, of Minerva-cottage, New Cross, in the county of Surrey, engineer, his executors, administrators, and assigns, license to use and practise for his and their benefit, the said patent invention during the remainder of the term granted by the said letters patent, rendering to the said James Lancaster Lucena certain sums of money or reservations.

"Memorandum of alteration to be entered by the said James Lancaster Lucena, assignee of the said patent, and the said William Morgan, the possessor of the said license, with the clerk of the patents of England, pursuant to an Act passed in the fifth and sixth year of the reign of his late Majesty King William the Fourth, intituled 'An Act to amend the Law touching Letters Patent for Inventions.'

"Whereas the said Elijah Galloway, in the said specification, declared that the nature of his invention consisted, first, in an improvement of the steam-engine, whereby he was enabled to obtain a rotatory motion from the alternating action of the axis of a piston, which piston makes about three-fourths of a revolution within the steam cylinder; and, secondly, in an improvement on paddle-wheels for propelling vessels, whereby the float-boards or paddles are made to enter and come out of the water in positions the best adapted, as far as experiments have determined the angle, for giving full effect to the power applied; And whereas, it being conceived that the said specification, so far as related to the improvement in paddle-wheels or machinery for propelling vessels may be rendered more generally easy of comprehension; We, in order to effectuate that object, are desirous of entering a memorandum of alteration in the said specification containing the following additional explanation. The mode of adjusting the eccentricity so as to obtain the different angles which may be necessary or required will be sufficiently obvious to mechanical and scientific persons. The accompanying diagram more distinctly

In re Galloway's patent

and 14th of December 1838, when Mr. Solicitor-General granted leave, certified by his fiat and signature, that the petitioners might enrol the disclaimer and the memorandum of alteration, on condition that the petitioners should take no proceedings against parties for the future using of the wheels which had been made and sold by the defendants in the suit.

IN RE GALLOWAY'S PATENT.

In the Privy Council.—1843.

Sir W. Follett and *Mr. Butt* for the petitioner.

Mr. M. D. Hill for Messrs. Maudslay and Field, who opposed the further extending the patent.

This was an application by J. L. Lucena, as assignee of the patent, under the Statute 5 and 6 William IV., to extend the letters patent granted to Elijah Galloway on the 2d day of July, 1829. Several witnesses were called

---

explains it. Draw a line to represent the float (*d*) at the required angle entering the water, another line to represent the float at the required angle quitting the water, and a third line to represent the float at the lowest point, or under the centre, where the float ought to be vertical, or nearly so; these three positions give the centre of eccentricity by a well-known mathematical proposition; for the extremities of the bent stems (*f*) will be points in the eccentric circle, and from those points the centre may immediately be found. The length of the rods also will be obtained by drawing lines from the points where the end of each stem (*f*) touches the eccentric circle to its pin joint in the disc, A, and thus a construction may be made for any required case as will appear in the figure or drawing, C. G is the centre of the main shaft. O, M, is a line representing the float entering the water. O, Q, its bent stem. P, N, is a line representing the float quitting the water. P, R, its bent stem. F, J, is a line representing the float vertical at the lowest point, or immediately under the centre, G. F, L, its bent stem; then Q, L, R, are points in the eccentric circle from which, X, the centre, may be found by well-known mathematical methods, and giving to the centre the practical size which its required strength may render necessary. X, L, is the fixed rod, and *s*, H, *s*, I, &c., are the other rods.

"In witness whereof we, the said James Lancaster Lucena and William Morgan, have hereunto set our hands this fifteenth day of December, one thousand eight hundred and thirty-eight.

"James L. Lucena.
"William Morgan."

In re

on behalf of the petitioner, who spoke of the novelty and great utility of the invention. The evidence given being, for the most part, similar to that given in the case of *Morgan* v. *Seaward*, it will not be necessary to repeat the evidence here, as it will be found at considerable length in the above-mentioned case. On the part of Messrs. Maudslay and Field, Mr. Farey and Mr. Barnes were called, in order to show that the invention was old and useless, producing similar evidence of supposed want of novelty as was produced on behalf of the defendants in *Morgan* v. *Seaward*.

Lord Brougham gave judgment as follows:—

In this case, their Lordships have had before them, on one branch of it, a great deal of evidence on either side, respecting which evidence this observation arises, that it cannot really, on examining it upon any material point,—upon any point whereupon the decision of their Lordships can ultimately turn, be said to be conflicting evidence. It appeared, for instance, to be a conflict, at least by the evidence of one of the witnesses, who said that the Confiance had, the fourth time she was fitted with wheels, not the paddle-wheel in question, but another wheel, he did not know exactly what, but not that, he thought; but we have on the other side Mr. Morgan, who made the paddle-wheels in both cases, and who gave a very fair and impartial and careful account of it, and he gave most distinct evidence, upon his oath, to the fact that the first and second and third paddle-wheels were all set aside, having failed from some defect in their power, and that the fourth was made according to the principle of the first, which was according to the model of the four floats at the end of the vane at the outside of the spindle, and according to the plan without any of the alleged improvements in the frame, although there can be no doubt, and it is past contention, that it does not admit of a choice between the two. It must, however, be observed, that it cannot here be said that the difference between the float being at the end or outside of the spindle and the balance-float, or the float, part of which is inside and part outside the spindle, is a material difference or an improvement; if it were an improvement in the invention that might be urged, but the patent is not taken out, as we understand it, for that particular construction of the wheel, the patent is taken out for a mode of making floats (whatever they are, Galloway's patent.

whether the balance-float or the single float, whether floats partly inside and outside the spindles, or floats entirely inside the spindle, whatever may be the mode and manner of making the float) enter and go through the water at a particular angle, and then quit it at another angle, at such an angle as shall oppose resistance to the matter; that being the object to be attained, the principle being thereby applied of opposing the greatest space in the most advantageous form to give resistance where resistance is wanted for the power, and to oppose the least resistance where it is no longer wanted for the power, but is only wanted to withdraw it, either through the water in the first instance, or through the air in the next, upon the ordinary principle of feathering an oar.

Now, it appears that improvements were made in the float, such manifest improvements, that no person would, after those, ever think of persisting in using the invention as it originally stood, but would have recourse to the improvements. That, however, is no reason against the claim of the original inventor; it is only saying that his invention, though useful, has been capable of improvement, and its having been improved affords no reason for denying him an extension of the patent, if upon other grounds he has merit, and if upon other grounds he has shown not to have reaped a due benefit in proportion to that merit. If such an argument were to prevail, any improvement made by him upon the patent would at once take away the patentee's right to obtain, under whatever circumstances he may come before this Court, a recommendation to have under the Act of Parliament an enlargement of the term.

Some difference of opinion has been expressed by learned men, men of great learning and great experience, and men of great ingenuity in their several departments; but in weighing the testimony of those gentlemen, much depends, as it is in conflict, upon the spirit in which the testimony is given. Now, I think the testimony of Mr. Morgan to the excellence of the invention, and to its perfect use when in the "Confiance," and to the perfect success of the same invention applied to the "Trieste," was given in a manner far more to conciliate one's confidence, than the very coloured statement which some of the witnesses gave,—very ingenious and very honest men. Mr. Barnes, for instance, and Mr. Farey, (whom I

Inke

have long and well known as a very ingenious person in all cases of this sort, both in law and equity, as indeed, we all know,) yet those gentlemen appear to labour under very considerable excitement with regard to this patent, so much so, that Mr. Barnes said, in answer to a very simple question, that he never saw such an attempt at mechanism in the whole course of his life; he would not allow it to be mechanism. Now, that is very much like the reverse of the evidence that was given in favour of the patent; and even the other evidence given against the patent, was in favour of its being mechanism, especially taking into consideration that for which the patent is claimed; namely, not one particular mode of constructing the axle, or one particular mode of placing or constructing the float rather than another, or of making the wheel rather than another, but one particular mode by which the angle is to be varied, at which the float, however constructed, or the wheel, however made, enters, goes through, and emerges from the element in which the force is to be gained by the wheel being applied.

Their Lordships are therefore inclined to think that there is no reason for doubting the merit of this invention, and a very useful invention it is, though one really is somewhat at a loss, the more one sees of it, to understand why hitherto it has not been more generally and more largely used. I hope that it will come more into use for the benefit of the public. It appears that it has increased from an hour to an hour and a half and two hours, the speed of vessels; and it also appears to get rid of a most painful and irksome part of steam-boat travelling, as every one who has been on board steam-vessels is aware, which though to some persons may appear only inconvenient and unpleasant, with females in a delicate state of health is very serious, so serious, that some persons whom I am connected with, though unable to travel by land, and to whom steam-boat communication would be a very convenient means of travelling, are unable to use it, simply and solely on account of that trembling vibrating motion almost all of which is taken away by this invention. One hopes, therefore, that it may succeed. The evidence of Captain Kennedy is very material in this respect; and though Mr. Farey gave a very confident opinion as to the frail nature of some parts of the wheel from its being half-axle, and that it must be very bad to

Galloway's patent.

use, this is to be observed, that Mr. Farey was never in one of these vessels in bad weather; he came from Petersburgh to Copenhagen in summer,—as I know, a very smooth sea in summer,—and the rest of his experience is confined to the river, which accordingly is liable to a very different observation from a voyage at sea. Now if this kind of half-axle is so very bad to use, and so very little to be relied upon, one does not really quite understand how it was possible for Capt. Kennedy to have weathered that dreadful hurricane, which appears to have been one of the most severe hurricanes that one ever heard a description of; so much so, that four vessels perished in coming out of harbour, and vessels were actually driven from the harbour, great and small, and exposed to great jeopardy during the continuance of that dreadful gale; it was a regular West India hurricane, one of the most dreadful visitations that the elements ever inflict, and accordingly he gives a most dreadful account of the all but hopeless state in which his vessel was left. It appears to have been most roughly handled by that furious hurricane, nevertheless this paddle-wheel seems to have done its duty most admirably and powerfully, and another would not have done so well.

Upon these grounds their Lordships are to consider whether or not a profit has been realized by the patentee. Now it appears that from four years' litigation, entailing an expense of 2,423*l.*, including the expense of taking out the two patents, and including the expenses always attendant upon bringing a patent invention, however useful or however much approved of by the public, into use, and deducting the expense of the steam-engine which was set aside and afterwards exported, and deducting all expenses not belonging to this very invention itself, by an examination very strictly gone through both by the bar and the Court of persons called for that purpose, the 6,000*l.* which has been received has been considerably more than exhausted by that expenditure. And then we are to observe that the 6,000*l.* was not, properly speaking, the patentee's profit, it was not the profit of the monopoly, but the profit which any manufacturer employed to make these vessels with these engines would have derived by it who had no right to the patent, and no right to the monopoly. That is a very material circumstance, for it shows that all the poor inventor got by this patent was a

In re

sort of priority in this market, a preference in obtaining those orders, and no profit whatever from his monopoly. Not only, therefore, was the expenditure greater than the profit received, but the proportion of that expenditure to him was still greater.

Their Lordships, taking all these circumstances into consideration, are of opinion that they ought to recommend, under the powers of the Act, that the patent should be extended, and they consider that the fit and proper period of that extension should be five years.

IN RE ERARD'S PATENT.

In the Privy Council.—December 15, 1835.

Mr. Cresswell and *Mr. Jonathan Peel* appeared for the petitioner, Pierre Erard, of Great Marlborough-street, the well-known harp and piano-forte manufacturer to Her Majesty and the Royal Family.

The petition stated that the petitioner was the nephew and successor of Sebastian Erard, the inventor of the double action harp, and whose establishment in Marlborough-street, the petitioner had for many years conducted. That the petitioner, jointly with his uncle, had devoted much time and study to the construction of musical instruments, more especially the harp and piano-forte; and having, after thirty years of study, produced, in the year 1810, the invention of the double action harp, subsequently gave great time and attention to the piano-forte. That at that period there were two instruments in use, the grand and the square pianoforte; each had its own system of action for communicating the touch of the finger, or the key, by means of the hammer, to the string. The one was called the grand, the other the square action. The square action was without any check or stop to the hammer, and though, from this circumstance, flexible and quick in repeating, was imperfect, inasmuch as the hammer was liable to rebound to the string after the blow had been struck, and thus interrupt the harmony of the music. The grand action, on the other hand, having a check to receive the hammer after the blow, was

Erard's patent

free from this defect, but was slow in repeating; and though possessed of power and precision, was incapable of executing, to perfection, the details of rapid music, inasmuch as from the construction of the mechanism, the player was unable to modulate the tones of the note, or to repeat with sufficient rapidity, the note once struck being incapable of repeating until the key had resumed its original horizontal position. That to these defects the efforts of the petitioner and his uncle had been devoted for years, and their researches at length became the subject of patents, that for England, bearing date 22d December, 1821; Scotland, 6th April, 1822; Ireland, 14th December, 1822. That the petitioner, since obtaining his patent, had spared neither time nor expense to bring his invention to perfection, and had expended on it upwards of 15,000*l*. That he had no common difficulties to contend with. That he was at great expense and labour in constructing the lathes, tools, &c., necessary for a new invention and accustoming his workmen to it. That it was for these reasons some years elapsed before he could bring his instruments out in a perfect form. That subsequently when he had succeeded in this, he was met by various objections; first, he was told that the invention was no improvement: subsequently, when all the performers of eminence adopted his instrument, the objection assumed another shape; it was admitted (because it could no longer be disputed) that his invention was good, but it was stated, that a mechanism to produce such beautiful effects could not but be too refined to last. That under these and other disadvantages, the petitioner had been prevented from turning his invention to account, and, therefore, prayed His Majesty to grant a prolongation of his term for the further term of seven years from and after the expiration of the original terms granted by his several letters patent.

The petition also comprised another patent, taken out by the petitioner in 1825, for applying the same invention to piano-fortes of other descriptions, and also for a peculiar mode of bracing the instrument, in no way connected with the former patent.

The petitioner's first English patent, for which the extension was prayed, being about to expire on the 22d December, he was unable to comply with the rules of their Lordships, and having published his notices in the "Gazettes" of the 9th, 13th, and 16th October, and the "Times," "Morning Chronicle," and "Morning Post" newspapers, of the 9th and 12th October, and no Caveat having been entered, their Lordships, on application by Counsel on the 3d December, appointed the 15th for the day of hearing.

Lord Lyndhurst enquired of the petitioner's Counsel whether the Attorney-General had received notice of the petition, but on being reminded that no such formality was required by the Act, merely observed that great responsibility was thrown on their Lordships by adjudicating on the case in his absence. His Lordship then inquired for the specification and drawings.

Mr. Cresswell suggested that these were immaterial on the present occasion, inasmuch as the extension of the patent would not affect its validity in any way.

Their Lordships, however, appeared to think that some evidence ought to be given, to show the petitioner's compliance with the statutes relating to patents, and the specifications, being in Court, were produced with the drawings and models.

Mr. C. Freshfield, the petitioner's solicitor, produced the original gazettes and newspapers, and proved inserting the notices required by the Act, and by their Lordships' order appointing the hearing.

Mr. Brothers, the petitioner's book-keeper, was called to prove the amount expended in working the patent, and the amount received for the sale and hire of instruments. He produced a cash account, extracted from the petitioner's books, showing the disbursements and receipts in every year, from the 22d December, 1821, to the 31st August, 1835, and proved the correctness of it. From this it appeared, that the petitioner had expended upwards of 3,000*l.* before any returns were received; that the first return received was not until the year 1826.

This witness underwent much and close examination from *Lords Lyndhurst* and *Brougham*, whose inquiries were directed to ascertain whether the money in question was expended in working the patent or in preliminary preparations; and, also, whether the instrument could be made at a saleable price. Their Lordships also strictly examined the witness as to the principle and mode in which the account had been made out, the manner in which the stock had been valued, to arrive at the con-

Erard's patent

clusions given in evidence; and so strict were their Lordships' inquiries on these points, that the witness was sent to Marlborough-street for his own and a foreman's rough memoranda of the stock.

Lord Lyndhurst, after much investigation, expressed himself entirely satisfied with this part of the case.

This witness also produced a list of the performers who had played in public on the instruments in question, by preference, during the last and former seasons. Among the persons named were Moschelles, Hummel, Hertz, Mendelshon, Listz, Pixis, Dulcken, Kiallmark, &c., &c. The witness also proved that the sales of the instruments had numerically increased in each year, from the year 1825 up to the present time.

William Webb, one of the petitioner's foremen, produced the models of the invention, and explained the advantages of the action as set forth in the petition, and also the expense of the manufacture, which was proved to be nearly two-thirds greater than the cost of the old action, making the whole instrument considerably more expensive to the manufacturer than the old instrument. He also proved that the petitioner sold his instrument at the same price as the old makers.

This witness was examined by *Lord Lyndhurst*, with a view to ascertain whether the whole money expended had been laid out in working the patent according to the specification, and whether a portion of the outlay had not been occasioned by experiments and improvements on the original invention.

John Webb, another foreman, confirmed the preceding witness, and proved the value of the stock in hand, in the petitioner's patent piano-forte manufactory, according to the last price, to be about 10,000*l.*

Madame Dulcken, the celebrated pianist, stated that, on coming to this country, she brought with her a German piano; that she found it unequal to public performance, and tried all the best instruments of the old makers; that she was unable to play on any of these in public, from their heaviness of touch, and after some time she was referred to Mr. Erard; that she tried his instrument, and found it in every respect superior to any she had ever tried, including even the German, both in respect of its lightness of touch, power, and expression; that she immediately obtained one of his, and had never used any

In re Erard's patent

other since; that she had had it in constant use for seven years; that during that period it had never broken a string; had required very much less tuning than any other instrument; had received as much wear as an ordinary instrument in ten years, and was, nevertheless, then in as good condition as when new. She stated, that she had taken one of these instruments to St. Petersburgh; that it was constantly removed from house to house, from hot rooms through intense cold, and sustained no injury, either in the mechanism or in the tuning.

This lady had her piano-forte in Court, and played on it by direction of their Lordships.

Mr. Latour, one of the directors of the Philharmonic Society; *Signor Scappa*, leader of the band at the Opera; *Mr. Kiallmark*, *Mr. Werner*, *Mr. Jackson*, *Mr. Graddon*, *Mr. Stil*, all performers, or persons intimately acquainted with the piano-forte, were examined, and spoke in the highest terms of the excellence of the instrument, and its superiority over those of the old construction. They all of them concurred in stating that, in their opinion, it was not only lighter in touch, and more brilliant than the old instruments, but was more durable, and less easily put out of order. They explained the difficulties with which the inventor had had to contend, Several of them bore testimony to the unfounded statements circulated by interested or ignorant persons, to the disadvantage of the instrument, and one of them mentioned an instance, within his own experience, where a performer, who had provided himself with one of Erard's instruments, was not suffered to play on it in public.

Mr. Latour also stated as a fact, that one of the instruments in question, which had been in use ten years, was recently sold by public auction for 95*l*.

Several of the witnesses, in answer to questions from *Lords Lyndhurst* and *Brougham*, stated that the new instrument was decidedly to be preferred, on the ground of its intrinsic merits, by the great performers, among whom Moschelles, Hertz, and Hummel, were named; and that the instrument was, in their experience, more durable than those of the old construction, and less liable to get out of tune.

Mr. John Farey, Civil Engineer, stated that he had accurately compared the specification with the model; that the specification had been known to him for several

Kay v. Marshall.

years, having, in fact, been prepared by his brother, and settled by Sir John Copley. That he considered the invention one of great ingenuity and merit; that he always thought it must ultimately succeed in superseding the old construction of the instrument; but that being in itself an invention to carry into effect a great refinement in art, it would take several years before it could be fully appreciated. He explained the objects specified in the second patent of 1825 to consist in a new application of the mechanism comprised in the original patent, which the witness considered to have been covered by that patent, and also in the addition of a system of bracing to the piano-forte independent of any other improvement.

Lord Brougham then called back the foreman to ascertain what proportion the expense of the bracing bore to the whole outlay; and was informed that it was very trifling.

Lord Lyndhurst delivered the judgment of the Court. He said that, on consideration of the whole circumstances, their Lordships thought that a sufficiently strong case had been made out, both on the score of the hardship of the case and the merit of the invention, to justify their Lordships in recommending His Majesty to extend the first patents for the term of seven years; but that, in their Lordship's opinion, no case had been made out as to the second patent of 1825. His Lordship added, that in all such cases, their Lordships would require a strong case of hardship to be made out, as well as a strong case upon the utility of the invention.

KAY *v.* MARSHALL.

In the Court of Chancery, before the Lord Chancellor (Cottenham).— January, 1836.

In this case the plaintiff, the patentee of an invention for "New and Improved Machinery for preparing and spinning Flax, Hemp, and other fibrous substances, by power," filed a bill to obtain an account of the numbers of spindles set up and used by the defendant, according to the plaintiff's invention, praying for an account of all profits which the defendant had made by

Kay v.

such use of the invention; and also praying that the defendant might be restrained, by injunction, from further using the invention. The bill set forth the grant of the letters patent, and that a specification had been duly enrolled fully describing the nature of the invention. The bill also set forth the nature of the invention in the words in which it was claimed in the specification; and avowed that the defendant had set up and was using an important part of the invention, as described in the specification, viz., the use of drawing-rollers, set at a distance of not more than two-and-a-half inches apart when spinning with wet flax. The defendant demurred generally to the bill for want of equity; and on hearing the demurrer argued, the Vice-Chancellor ordered that the case should stand over, with liberty to the plaintiff to bring such action at law as he might be advised. The plaintiff now appealed against this order.

Sir F. Pollock, *Mr. Kindersley*, and *Mr. Booth*, appeared for the plaintiff.

Mr. Barber, *Mr. Wigram*, and *Mr. R. Atkinson*, for the defendant.

It was argued that the order was without precedent. If the Vice-Chancellor doubted the validity of the patent, he should have sent a case to a Court of law. Here the patent had been held for several years, and had been sustained, when proceedings at law against other parties had been taken. His Honour had considered the specification uncertain, because the invention was said to consist in "the placing of the retaining rollers, *e*,*e*, and the drawing-rollers, *c*, *c*, nearer to each other than they have ever before been placed, say, within two and a half inches of each other," such expression he considered was equivalent to "about," or "perhaps," and was much too loose. It was contended that his Honour was in error, for had he read the whole specification, he would have found that the description was exact, and that the words quoted were that which constituted the claim of the patentee and the novelty of his invention.

For the defendant it was said that his Honour the Vice-Chancellor considered that the patent was void, but having respect to the long period the patent had been held, he would not allow the demurrer, being willing to give the plaintiff an opportunity of making a valid legal title in a Court of law, which was necessary as a founda-

Marshall

tion for a Court of Equity moving in the question. The invention was not such as could be maintained in a Court of law as a manufacture under the statute. It was simply adjusting the old machinery to the altered state of the flax, caused by maceration, and the maceration itself was not patentable, the invention, as described, not being properly the subject of a patent.* The specification was

---

* The specification is as follows :—

"To all to whom these presents shall come. I, James Kay, of Preston, in the County of Lancaster, cotton-spinner, send greeting. Whereas, His present Most Excellent Majesty, King George the Fourth, by his Letters-patent under the Great Seal of Great Britain, bearing date at Westminster, the 26th day of July in the sixth year of his reign, did for himself, his heirs, and successors, give and grant unto me, the said James Kay, his especial licence, that I, the said James Kay, my executors, administrators, and assigns, or such others as I, the said James Kay, my executors, administrators, and assigns should, at any time, agree with, and no others from time to time and at all times during the term of years therein expressed, should, and lawfully might make, use, exercise, and vend within England, Wales, and the town of Berwick-upon-Tweed, my invention of 'New and Improved Machinery for Preparing and Spinning Flax, Hemp, and other Fibrous Substances by Power,' in which said letters-patent is contained a proviso, obliging me, the said James Kay, by an instrument in writing under my hand and seal, particularly to describe and ascertain the nature of my said invention, and in what manner the same is to be performed; and to cause the same to be enrolled in His said Majesty's High Court of Chancery within six calendar months next, and immediately after the date of the said recited letters-patent, as in and by the same reference being thereunto had, will, more fully, and at large, appear. Now, know ye, that in compliance with the said proviso, I, the said James Kay, do hereby declare the nature of my said invention to consist in new machinery for macerating flax and other similar fibrous substances, previous to drawing and spinning it, which process I call preparing it; and also in improved machinery for spinning the same after having been so prepared; and in further compliance with the said proviso, I, the said James Kay, do hereby describe the manner in which I perform my said invention by the following description :—

" First, of the new machinery for macerating; and,

" Secondly, of the improved machinery for spinning, reference being had to the drawing annexed, and the figures and letters marked thereon, that is to say,—

" *Description of the Drawing.*

" I will first describe the new machinery for the purposes of maceration.

" Fig. 1, represents a front elevation of an ordinary flax spinning-frame as used for preparing flax, hemp, and other fibrous substances by power, with this alteration, namely, instead of the ordinary spindles which would be placed at M, J, substitute the twisters and rollers

Kay v.

also loose and uncertain. It was impossible, from that document, to ascertain how far a person might go in safety without infringing the claim in respect to the

---

coloured blue, but to which being well known in the trade, I lay no claim as being any part of my said invention. A, A, A, A, are four tin cans set into tin or other vessels, B, B, B, B, and kept from slipping to the bottom of these vessels by means of the beading or rim, *r*, *r*. The can and vessel on the right are shown in section in order more distinctly to show how the one sets into the other; the vessels, B, B, B, B, are bored with holes like a cullendar, and set into a trough, C, C, filled with distilled or other soft water at about summer heat. As the cans, A, fill with rovings or slivers of flax, such rovings or slivers should be pressed down by means of a plunger into the vessels, B, B, B, B, until all the air in the flax be expelled through the holes in the vessels B, B, B, B; until this is effected the roving or sliver will not be sufficiently macerated. When the roving or sliver lies in one completely saturated mass at the bottom of the vessels, B, B, B, B, from having been repeatedly pressed down and under the water by the plunger, the cans may be lifted off, and the roving or sliver may be divided, and the vessels and trough may be removed with the compressed rovings or slivers in them, and left to steep for about five or six hours, when they will be in a fit state to be removed to the spinning-frame, and acted upon as hereinafter set forth.

"Fig. 2, is a side view of fig. 1, and merely given to show the relative position of the can, macerating vessel, and flax spinning-frame.

"Having now described the new machinery for the purposes of maceration, and which consists only of the vessels, marked B, and the trough of water marked C, I will proceed to describe the improved machinery for spinning flax and other similar fibrous substances.

"Fig. 3, represents a side view in section of my improved spinning-frame to be worked by power in any of the ordinary methods. D, D, is a wooden or other trough, divided into compartments, each compartment having the contents of one of the macerating vessels emptied into it in such manner that the said contents, when so emptied into it, may have the appearance represented in this figure, and the best mode which I have found of doing this has been to turn the macerating vessel upside down carefully over the compartment, when the end of the roving or sliver will be easily found. E, E, represents the contents of two of the macerating vessels emptied as aforesaid. The ends of the roving or sliver being found, they are led over the roller, G, at the top of the frame, H. From this roller, G, the roving or sliver is led between an ordinary pair of retaining rollers, *e*, *e*, and a pair of drawing rollers, *c*, *c*; the drawing rollers, *c*, *c*, move at a space eight times faster than the retaining rollers, *e*, *e*, which retaining rollers I find answer better to be fluted. I place the drawing rollers only two-and-a-half inches from the retaining rollers, and this constitutes the principal improvement in the said spinning machinery, for the roving being so completely macerated, would not hold together to be drawn out while in such a state, to the ordinary length of the staple; but this very state, when drawn in so short a length as here represented, enables it to be spun very fine and evenly, for it should be stated that there is no elasticity in the fibre of flax, hemp, nettle-weed,

Marshall

distance at which the rollers might be placed apart. The defendant offered to put in a full answer, but the discovery sought was most vexatious and oppressive.

His Lordship, in giving judgment said, the plaintiff's bill states that he has obtained a patent for new and improved machinery for preparing and spinning flax, hemp, and other fibrous substances, and that in his specification, duly enrolled, he set forth, described, and ascertained the nature of his said invention, and the several parts thereof, and by what means the same was to be performed. Upon the face of his bill, therefore, he alleges that he did, by his specification, do all that his patent required him to do, namely, describe and ascertain the nature of the invention, and in what manner the same was to be performed. What follows in the bill is merely the claim, not intended to be any description of

---

or other the like substances; but when drawn by rollers so placed as aforesaid, and moving at the relative speeds aforesaid, and in the completely saturated state aforesaid, the fibres themselves are pulled asunder and require to be twisted immediately or the continuity of the thread would be destroyed. This position of the rollers is not necessary in the ordinary mode of spinning such substances as aforesaid, for in the ordinary process the elongation of the skim only is effected by the process of drawing, and not the elongation of the fibres themselves, which compose the skim. J, is the thread or staple in its twisted or spun state, and L, is the ordinary bobbins and fly.

"Now, whereas, I hereby declare that what I claim as my invention, in respect of new machinery for preparing flax, hemp, and other fibrous substances, are the macerating vessels marked B, and trough of water marked C; and that which I claim as my invention in respect of improved machinery for spinning flax, hemp, and other fibrous substances, is the wooden or other trough marked D, for holding the rovings when taken from the macerating vessels; and the placing of the retaining rollers, *e*, *e*, and the drawing rollers, *c*, *c*, nearer to each other than they have ever before been placed, say within two-and-a-half inches of each other for the purpose aforesaid. And such my invention being to the best of my knowledge and belief entirely new, and never before used within that part of His said Majesty's United Kingdom of Great Britain and Ireland, called England, the said dominion of Wales, or town of Berwick-upon-Tweed, I do hereby declare this to be my specification of my said invention; and that I do verily believe this, my said specification, doth comply in all respects fully and without reserve or disguise, with the proviso in the said hereinbefore in part recited letters patent contained, wherefore I do hereby claim to maintain exclusive right and privilege to my said invention.

"In witness whereof, I, the said James Kay, have hereunto set my hand and seal the 26th day of January, in the year of our Lord, 1826.

"JAMES KAY."

Kay v.

the means by which the invention is to be performed, but introduced for the security of the patentee, that he may not be supposed to claim more than what he can support as an invention. The claim is not to aid the description, but to ascertain the extent of what is claimed as new. It is not to be looked to as the means of making a machine according to the patentee's improvements. If, therefore, the specification, as containing the description, be sufficiently precise, it cannot be of any consequence that expressions are used in the claim which would be too general if they professed to be part of the description.

In the present case, the plaintiff alleges that he has before explained the means by which his invention was to be performed: and the defendant, by demurring, admits this statement to be true. The plaintiff then states that he claims his invention in respect of new machinery for preparing the flax to be as he there states—a part of the patent which is not in question; and that what he claims as his invention in respect of improved machinery for spinning hemp, flax, and other fibrous substances, is, "the wooden or other trough marked D, for holding the rovings when taken from the macerating vessels; and the placing of the retaining rollers, *e*, *e*, and the drawing rollers, *c*, *c*, nearer to each other than they have ever before been placed, say within two and a-half inches of each other, for the purpose aforesaid." From what I have already stated, it is not necessary for me to say much upon the construction to be put upon these words: the sufficiency of the description not being in my opinion to be looked for in this place, and the plaintiff alleging that he has before fully described the means by which his invention is to be performed. Were it necessary for me to express an opinion upon these words, I should probably be of opinion that their true meaning was, that by means of the invention, the rollers might be brought within two and a half inches of each other. The claim is for the means of approximating them; and the degree attained is stated to be two and a-half inches, and the plaintiff afterwards states that to be the exact distance.

It is to be observed that the claim consists of two parts, the process for maceration, and the improved machinery for spinning the macerated substance. The bill then alleges that, prior to the plaintiff's invention, the space

Marshall

between the rollers had been regulated by the length of the fibre, and that they had, therefore, been placed at the distance of from twelve to twenty inches, but that by a new combination of the drawing and retaining rollers, he has discovered the means of spinning flax at the distance of two and a-half inches only; and that by means of such improvement, a better substance was produced. If the plaintiff's statement had rested here, it would have been impossible, upon that statement, to raise a question as to the validity of his patent, as it would have amounted to a statement, that whereas in all machines heretofore used, the rollers were at from twelve to twenty inches apart, and could not be approximated—the length of the fibre regulating the distance—the plaintiff had contrived a new combination of the rollers, by which they could be approximated to two and a-half inches. It would then have appeared, that this object had been attained by a new combination of the rollers; but the bill goes on to state, that the approximating of the rollers is accomplished by using the fibre in a wet state; and it is therefore said that the discovery, in fact, consists in wetting or macerating the flax, and not in any improvement in the machine, the distance of the rollers being stated to depend upon the state and substance of the flax, and to be therefore liable to variation as that state and substance shall vary; and this must be the real question upon the validity of the patent. But it is a question which has been open ever since the patent was obtained in the year 1825; for as the alteration in the spinning machine is claimed as part of the invention, if such alteration did not entitle the patentee to be protected in the exclusive benefit derived from it, the whole patent would have been void. The bill then states, that what the plaintiff so claims is new and useful; that he has been in the exclusive enjoyment of the privilege ever since the year 1825; that he has brought several actions for its infringement; and that the validity of his patent has been established at law in those actions.

To this bill the defendant put in a general demurrer, and upon the argument in the Court below, the Vice-Chancellor ordered the demurrer to stand over, with liberty to the plaintiff to bring an action to try the validity of the patent. No instance has been produced of such a course having been ever taken upon a demurrer; and I

Kay

am of opinion that, however beneficial it might be in the result, by bringing the question in issue to a speedy determination, it is too great a departure from the practice of the Court, and too inconsistent with the nature of the question before the Court upon a demurrer, to be supported.

Upon a demurrer no question of fact can be in issue; the question being, not whether the plaintiff be entitled, but whether, if all he say be true, he is entitled. Every allegation, therefore, however false in fact, must be taken to be true; but in the action, the question will not be, what legal consequence will follow a state of circumstances such as the bill alleges, but what are the rights of the parties upon a state of circumstances proved to exist, and which may be totally at variance with the allegations in the bill. The question being, what is the law upon an admitted state of facts, it would not be according to the course of the Court to send such a question to a jury; but there is in this case the additional objection, that the facts before the jury will not necessarily be the same as are stated in the bill. It is no answer to the objection to say, that by the modern course of proceeding at law, the grounds upon which the verdict of the jury has proceeded will appear upon the record. This circumstance may no doubt render the verdict more useful in ascertaining the rights of the parties; but it may still leave the question quite open, as to what is the result in law of the facts stated in the bill. I am, therefore, of opinion that the order appealed from cannot stand.

It remains to be considered, whether the demurrer ought to have been allowed or overruled; and, upon this view of the case, I must assume that the Vice-Chancellor thought that he could not allow the demurrer; and in that opinion I think he was right.

The plaintiff alleges that he has been in possession of his patent-right for ten years, and that he has within that time established his right at law. The equitable relief flows from the legal title; and the question is, whether upon the statements in the bill, the Court can take upon itself to decide that the plaintiff has no legal title. If the plaintiff asking for equitable relief upon the ground of a legal title, states upon his bill a title which cannot be supported at law, the defendant may take advantage of it by demurrer, but if the plaintiff states himself to stand in

Marshall

the position of having so far established his title at law as to give him at least a *primâ facie* title, this Court will so far give credit to such circumstances as to afford him the aid of its jurisdiction until the suit shall be in such a state as to call upon the Court for a decision, or to direct such proceedings as may be necessary to complete the investigation of the right at law. Many cases were cited to show that, upon demurrer, the Court inquires, not whether the plaintiff may have a title from the facts stated, but whether he has stated a good title. But the cases which stand upon legal titles differ from those in which the title is altogether equitable. If, for instance, a plaintiff comes here for equitable relief, after he has established his right at law against the defendant, the Court will not withhold its assistance because it may doubt or disapprove the decision at law.

What, then, is the state of the plaintiff's legal right as he states it in his bill? That he has been in the enjoyment of it for ten years, and that he has, in actions against others, established it at law. There is therefore possession of a considerable duration, strengthened by the verdict obtained, though not thereby conclusively established against the defendants. To refuse to entertain the suit would be to deprive the plaintiff of the benefit of his possession.

In *Boulton and Watt* v. *Bull*,* *Lord Rosslyn* refused to dissolve an injunction, although the Court of Common Pleas had been equally divided upon the validity of the patent. There had, indeed, been long possession in that case, but the right was at that time very doubtful; and *Lord Rosslyn* proceeded upon the ground, that he would not disturb the possession. In *Harmer* v. *Playne*,† *Lord Eldon* acted upon the same principle, and said, that where the public had permitted enjoyment under a patent for a reasonably long time, the Court would give credit to the patent until the legal question could be tried; and he therefore granted an injunction, although he expressed great doubt as to the validity of the patent. In that case the patent was of thirteen years' standing. In *Hill* v. *Thompson*,‡ *Lord Eldon* again laid down the same rule, observing, that where a patent had been granted, and an exclusive enjoyment of some duration had existed under it, the Court would interfere by injunction without putting the party

---

* Vol. i., p. 156. † Vol., i., p. 246. ‡ Vol. i., p. 369.

Kay

previously to establish his title at law; but that where the patent was but of yesterday, and its legality was disputed, the Court would not act upon its own notions of the validity or invalidity of the patent, without the right having been first established at law. In that case the motion was made in the year 1817. The patent was taken out in the year 1814, and the specification bore date in January, 1815, but the invention had not been used until July, 1816.

These, indeed, are all cases of injunction; but the principle applies equally to cases of demurrer. The Court may refuse an injunction in many cases in which the facts, if stated upon the bill, would preclude a demurrer; but it could not grant an injunction upon facts, which, if stated upon the bill, would make the bill demurrable. If the facts do not give the Court jurisdiction, no injunction could issue; and for the same reason, a demurrer would hold if facts of that description constitute the bill. If the plaintiff in this cause should ever apply for an injunction, the truth of the statement upon the bill to which I have adverted will then come in question. Upon the demurrer, the truth of it cannot be questioned; and this bill represents such an enjoyment of possession under the patent, not by acquiescence merely, but by force of the assertion of title at law, as within the authority of the cases I have referred to, entitles the plaintiff to have his legal title recognised in this Court, until a proper occasion shall arise for having its validity ascertained. That I have already said cannot be done upon demurrer.

Upon these grounds I am of opinion that this bill states such a case as precludes the Court from saying, upon demurrer, that the legal title under which the plaintiff claims is bad; the order of the Vice-Chancellor must, therefore, be discharged and the demurrer overruled.

It was observed that the bill seeks useless and vexatious discovery, and that if the demurrer be overruled, the defendant will be under the necessity of answering and giving that discovery. It is perhaps true that the defendants have not such means of protection in cases of this kind as might be desirable, but that consideration cannot influence my judgment upon the demurrer.

On the hearing of the cause an action was ordered to be brought to ascertain the validity of the patent.

Marshall.

KAY *v.* MARSHALL.

At York.—Before Mr. Baron Parke and a Special Jury.— July 23, 1846.

This was an issue from the Court of Chancery to try the following questions:—Whether the plaintiff had, before and at the time of making the letters patent in the said bill of complaint mentioned, found out and invented any new and improved machinery, as in the said letters patent and bill of complaint and specification is alleged? and whether the said alleged invention of the plaintiff in the said bill of complaint and letters patent and specification mentioned and described, was before, and at the time of the making of the said letters patent, of much or any public benefit or utility, as in the said bill of complaint and letters patent is alleged? The plaintiff alleges the affirmative of both these issues, and the defendants negative them.

Sir F. Pollock and *Mr. Starkie*, appeared for the plaintiff; and *Mr. Cresswell* and *Mr. Wightman*, for the defendant.

Sir F. Pollock addressed the jury as follows:—Gentlemen, the plaintiff in this case was formerly a machine maker, afterwards connected with the cotton spinning business; and subsequently he became connected with the flax manufacture, and I cannot help saying, in addition to that, that I believe his name will be handed down to posterity as one of the greatest benefactors to his country. The defendants, of whom Mr. Marshall, of Leeds, is at the head, are probably, by name, well known in this great county as a house of most extensive business. Gentlemen, this issue is directed by the Court of Chancery, to try whether the invention of Mr. Kay, or that which he claims to be his invention, and for which he took out a patent in the year 1825, was new at the time when he presented it to the public; and, secondly, whether it is useful. Certain proceedings have been had in the Court of Chancery. We are to-day to try these two questions, that you may, by your verdict, inform the conscience of the Chancellor, and enable him to say whether he ought to give Mr. Kay that assistance which the Court of Chancery alone can give him, in preventing

Kay

persons from secretly availing themselves of his improvements without giving him that compensation which by law he is entitled to. The date of Mr. Kay's patent was in July, 1825, eleven years ago. The specification was enrolled in the month of January, 1826, upwards of ten years ago, and is consequently very nearly expired; but such is the importance of it, that even at this late period the defendant has thought it worth his while to invade the patent, to defend that invasion, and to resist the claim which I believe every other house in the trade, almost, has submitted to for years, and I believe it is almost unexampled in the history of patent law; and his Lordship, I am quite sure, will go with me in this remark, that at the end of ten or eleven years of the patent being in full play, the patentee enjoying very considerable benefit under it, an attempt should now be made to dispute it. Gentlemen, it has been disputed; it has been disputed in vain; and his Lordship may remember that, in the year 1831, when on the other side of the circuit, I had the honour to appear before him in the cause of *Kay* v. *Renshaw*, when the patent was disputed, but disputed in vain; and we have from that circumstance, and from the proceedings taken in the Court of Chancery, some notion of the point to be raised here to-day. But with entire deference to your judgment, which is to be exercised by and by, I think the case is utterly without defence; and when I have given you a short history of the state of the flax manufacture before this patent, and the state in which it is at present, and the results which the plaintiff's invention has brought about, before I come into any details of the invention itself, I think you will say there is a moral evidence in the cause, that there is an extraordinary character about the whole history of it, which is more striking, more convincing, more indisputable than you ever met with in the case of a patent in all your life. The cotton trade, you are aware, is at present one of the largest and most abundant sources of the wealth and prosperity of this country,—I was going to add, happiness; but there are circumstances connected with the cotton trade which lead persons to doubt whether there are not some human beings whose comfort would be increased by certain alterations or regulations in the working of that branch of trade. But as a national

Marshall

object, beyond all doubt the cotton trade is of the first importance in this country. I won't detain you by statistics connected with it; but we all know that under the influence of that trade, obscure villages have grown up into immense towns; land that was not worth five shillings an acre has come to be calculated by thousands and thousands of pounds per acre; population has increased; wealth has accumulated; capital has grown up; industry has flourished; and this country has been able to meet emergencies and to sustain burdens, and to make efforts and exertions, unparalleled almost in the history of the world. During this period the flax trade had made little or no progress until 1825, the date of Mr. Kay's patent, but the progress that has been made from that time down to the present is such that when this patent comes to be general, as it will, there can be no doubt that it will increase to an enormous extent; and no man can doubt, who has witnessed the increase during the last seven years, that the flax trade will increase and become as great a benefit to this country as that sister trade which has flourished for so many years. I have mentioned the date of Mr. Kay's patent; in 1826 he enrolled the specification of his invention. Patents are of different sorts; some for articles that a man may vend, and of course he obtains his remuneration in the price at which he sells them; others are for new methods of manufacture, the mode of remunerating for which is by granting licences. Mr. Kay set up a machine himself to satisfy the manufacturing world that he could do and was doing what he professed to do by his patent, and I think there never has been a complaint that he endeavoured to extort from any body any thing but a small and reasonable remuneration to himself. I am not aware that Mr. Kay has had any complaint made against him as to the remuneration which he charges. The mode of charging is so much per spindle. He does not give a licence in the gross. He says, "You shall have permission to use it, but you shall pay me so much per spindle;" and I believe there is not a person in the trade who has not been glad to enjoy the patent and pay him the price he asks for it. The date of the invention was in 1825: prior to that time all fine flax spinning was in this country, and I believe all the world over, done entirely by hand. You may suppose that the spirit of

Kay

enterprise, the desire to improve the manufacture of the country would naturally have carried into that branch of business the immense resources of the steam-engine; but no power except that of the human hand had ever been applied to the spinning of flax beyond a certain degree of fineness. No machine that had ever been designed, or tried, or dreamt of, could have accomplished that object till the year 1825. Now it is extremely important that I should state to you very shortly what are the details of this question. What is called a *lea* is a length of 300 yards; and the finest spun flax that was produced by machinery up to 1825 was forty *leas* to the pound of flax. All spinning that was superior to that in fineness was done by the hand; and you are probably aware that Irish linen, which is much valued in this country, is extensively made in Ireland, labour being cheaper there than it is here; indeed, the linen manufacture may be called the staple manufacture of Ireland, and all fine linens undoubtedly come from Ireland, all the fine work being done by hand. Since Mr. Kay's invention has been published to the world, there has been produced by artificial power, by the assistance of the steam-engine, spun flax of a much greater fineness than was ever produced before by hand. I am sure in this county I can't address a gentleman who is not aware,—none of you in the jury-box can be unaware,—that the cotton manufacture would be scarcely any thing but for steam; and that unless steam power can be substituted for animal power in manufacturing pursuits, it is impossible to produce an article that shall be very cheap; and that it is impossible for this country, unless the steam-engine be applied, to compete with other countries where labour is a great deal cheaper than it is here. It is the steam-engine applied to cotton that has given it that immense impulse which has raised it in the manufactures of this country. It was the application of the steam-engine that was the desideratum required to give the flax manufacture the same level and the same advantage. Up to the year 1825, no flax was spun by machinery of greater fineness than forty *leas* to the pound, that is, forty times 300 yards. They can now spin by machinery flax so fine that there shall be 200 *leas* to the pound; and the result of that is so extraordinary that I cannot refrain from mentioning it. If you have 200 times 300 yards to the pound, they give 60,000 yards,

Marshall

and as 1,760 yards make a mile (call it 2,000 in round numbers), you may spin a pound of flax to the length of thirty miles, and that can be done by Mr. Kay's machine and the use of the steam-engine. I don't deny that it could be done by hand before, though only by some of the ablest and most skilful of the land, and it would have taken a good deal of time to do it. It can now be done with perfect ease. I hold in my hand a specimen of spinning, the best that could be done by machinery prior to the year 1825; it is of the fineness of forty *leas* to the pound; and it is quite obvious that it is an article that is adapted to very coarse work, and that it never could be applied to the description of manufacture that could give to the flax trade that sort of impulse which has been given to it by Mr. Kay's invention. I will now hand you a specimen, not wrought for the purpose of being brought here, but of a very common sort; it is 110 *leas* to the pound, nearly three times the fineness of that I first showed you. You may easily see that it is capable of being wrought into cloth of a very superior kind. There has been no pattern-sample made for the purpose of giving you a specimen different from what occurs in the trade itself; but it can be spun as fine as 200, and I am told as fine as 260 *leas* to the pound. I shall prove as a fact, which my Learned Friend cannot deny, that before the year 1825 the trade got no fine yarn from any other source than the hand-spinning; and it cannot be doubted that since 1825 the quantity of fine spinning by machinery has increased; that it has gone on increasing in fineness; and that its progress during that time has been such that from year to year the demand has increased, the consumption has been greater, and manufactories have risen up. And you will find by the witnesses whom I have here from Scotland, Ireland, and every part of the kingdom where this sort of manufacture is encouraged and pursued, that the increase of the trade is such (and there is every prospect of its going on increasing), that I think I am entitled to say that Mr. Kay's name will be handed down to posterity as a benefactor to his country. His discovery was the result of industry and ingenuity; he applied his skill and experience in the right direction; and it was not by accident but by study and attention to the mode of obtaining success, that Mr. Kay has done what was never done

Kay

before. It is one strong feature of this case that is derived from the external history of the flax trade, that up to 1825 it never was done, and since that time it has gone on increasing; and there is little doubt that it will go on till the flax trade shall be on a level with the cotton trade of this country. I think this statement is about enough to satisfy any man who could be assured that the facts are true, and I defy my Learned Friend to contradict them. Let me but know that the invention of Mr. Kay's patent was contemporaneous with the application of steam power to the successful production of this fine article, and I require but little more evidence that the patent is useful, and that it is new. That it is useful there cannot be a doubt; that it is new you will be satisfied beyond doubt; for nobody, until Mr. Kay, had been able to produce any thing that could compete with hand power. After this general reference to the history of the flax trade, I will give you the history of Mr. Kay's invention, and I will prove it. Mr. Kay was regularly brought up a machine maker, and when turning his attention to the improvement of machinery, did not come, like some persons, with vague ideas of the perpetual motion, or some odd fancy which could have no legitimate connexion with the trade he was then following. He became connected with the cotton trade, and he then perceived this extraordinary fact. Raw cotton was about 10*d.* per lb. and spun cotton was 18*d.* per lb.; raw flax was about 6*d.* per lb. and spun flax was 4*s.* per lb.; so that, by being spun, flax was increased from 6*d.* to 4*s.*, being eight times its original value, or 800 per cent.; and cotton was increased from 10*d.* to 18*d.*, being less than 100 per cent., about four-fifths, or 80 per cent. I have no doubt every one of you will perceive what is the reason of that; one was done by steam power, and the other by hand. Mr. Kay immediately perceived that if he could invent a method by which steam power could be applied to the making of fine flax, in the same way that it was applied to the spinning of cotton very fine, he should probably, while conferring a great benefit on his country, be doing a great service to himself and his family. He entered upon a course of experiments and observation. He pulled to pieces portions of spun flax and cloth; he examined the matter in detail; and at length he came to the conclusion that if flax could be spun

Marshall

in such a manner as to imitate the operation of the human hand, he should then be able, by the application of the cheap power of the steam-engine, to accomplish his object. He considered what was the effect—what the woman did when she was spinning. She constantly wets her fingers; she draws out the thread to the requisite fineness; she measures it with her eye. There is, of course, a certain fineness beyond which certain people can't go; though with more care the finer it will become; and Mr. Kay thought that the moisture that was used in hand spinning must be the true secret of the fineness of the thread—that it was in that manner obtained. He made many experiments; and he tried to adapt the distance which was used in the cotton machine to the spinning of flax. It would not answer. The machine itself would not answer. Those wheels would not at all answer; but he tried to use the cotton machine, varying it so as to adapt it to the spinning of flax. That would not answer. He then thought that something turned upon the length of the fibre, and he tried his operations at various distances; and at length he discovered that if he macerated flax, and then spun it with an interval between the retaining roller and the drawing roller of about two inches and a half, he succeeded in his object. It was sufficient for him that he had done so. No man is bound to philosophize upon any of the improvements that he presents to his country. It is sufficient for him to do it, and to say how it can be done; he is not bound as a philosopher to analyze the natural secret of his success, but it does turn out upon that inquiry and investigation, that the cause of his success, and the cause of his failing previously, may be ascertained almost with mathematical certainty. Cotton is spun at a distance (which a course of experiments alone, I believe, has ascertained to be the best)—at a distance between the retaining roller and the drawing roller of an inch and an eighth, or something thereabouts. Flax used to be spun at a distance of, I think, from fifteen to twenty inches, or rather from fourteen to twenty-four inches. Mr. Kay's invention is this—macerate your flax, and then spin it with a distance of two inches and a half, and you will succeed. But if you macerate your flax and spin it at a greater distance, or at a less distance, you will not succeed, and if you do not macerate your flax you will not succeed even at that distance. Before I go further, I

Kay

will just explain to you the manner in which the operation is performed. This [pointing to a machine on the table] is a representation of a machine prepared according to Mr. Kay's invention. Here is flax in a certain state, prepared for passing through the retaining rollers to the drawing rollers. The drawing rollers are made to move with a velocity considerably greater than the retaining rollers, a velocity which varies according to the fineness of the flax you wish to produce. The distance between the drawing rollers and the retaining rollers is called in the trade the *ratch;* it is probably a corruption of what we cockneys call the *reach.* That [pointing to another machine] is a working model of the old mode of spinning, and there the distance between the drawing rollers and the retaining rollers is twenty-four inches. The distance in the cotton spinning is, I believe, an inch and an eighth. Of the mode in which flax is prepared I take it for granted in a general way you are quite aware. Flax is obtained from various vegetable substances: you may get it, I believe, even from nettles, and many other vegetables besides the flax itself. But when it is perfectly ripe it is to be put in a situation where the pithy part of it decays, and the fibre remains. It is then what in the South I believe is called *beaten,* and in the North is called *swindled.* It is then heckled, in order to get rid of its impurities; it is then got together into a loose sliver. It is not necessary to take up much time in describing these processes; but it is, as I have said, collected into a loose sliver, capable of being pulled out, and that is presently got into what is called a *roving.* This (exhibiting a roving) is the article that is presented to the machine to be spun; and the manner in which the two wheels operate will be readily explained by what you see here. If you keep pulling out in this way (the Learned Gentleman extended the roving) at one end and retain the other, it becomes finer and finer, and being formed into a thread is turned round this bobbin or spindle. I will now explain to you what turns out to be, on a curious inquiry, and philosophical analysis, the important part of Mr. Kay's invention. The dry flax has its fibres: when these come to be examined, they seem to vary somewhere from fourteen to fifteen or from twenty to twenty-two inches long. That is the reason why the *reach* or *ratch* of the common spinning machine was made of that

Marshall

length; for the effect of the two wheels is this, if the flax be presented and retained with a certain degree of force here (at the retaining rollers), and then be pulled at the other end (by the drawing rollers), and if the interval be a little longer than the fibres that have to be pulled, this (the drawing) end gets hold of some of them that are not retained at the other (the retaining) end, and the fibres of the flax are thus caught one by one, and as they slip over are spun round and become a thread. That was the mode of spinning by power adopted in former times. Mr. Kay discovered, as he thought, though for ought I know it may have been known before, that when moisture is applied to flax its fibres separate and become shorter, and that that which, if pulled out and examined, appears to be only one, the moment it is wetted and twisted about immediately seems to separate into a great many; and that is the benefit of maceration. There is a vegetable mucilage or gum of some sort which seems to bind the flax together, and when that is moistened by any process, the large fibres separate themselves into smaller fibres. Mr. Kay pretends not to be a philosopher; he discovered it by experiment; and it is rare that philosophy has gone beyond experiment. I believe it may have been the case with Sir Humphry Davy's safety lamp and some few others; but, generally, experience has preceded philosophy, and I believe that in general philosophy has followed the practical man at a humble distance to explain what he was doing, and not to conduct him on his way. It now turns out that those finer fibres, those ultimate fibres, are about two and a half inches long, or a little less. It also turns out upon an analysis of cotton, that the fibres of cotton are an inch and an eighth in length, or something less; and now I admit that the philosophy of Mr. Kay's discovery is perfectly well understood. If you spin cotton you must have your *ratch* about an inch and an eighth, because that is a little more than the length of the fibre. At this distance you always get a grip of the next fibre before the fibre you are operating upon has passed through, but if you were to attempt to spin cotton at a greater *ratch*, the consequence would be that you would pull one fibre out before you got hold of the next, and the thread would—I ought not to say break; it is not properly breaking—the thread would *discontinue*, if I may use such a phrase. In the

Kay

common flax machine there is a *ratch* extending to four and twenty inches. The large fibres of flax, when not moistened, are from fifteen to twenty inches. If you have a *ratch* greater than that, you go on pulling and pulling, and catching the fibres and pulling them out and making them slip over, and you make the thread as fine as the fibres will give it you. But you observe, that in that common spinning it has never had any maceration; it has not had the wetting and twisting that the spinner gives it in the hand, nor has it received any solution in water which enables it to break up into ultimate fibres. That was the old spinning; and Mr. Kay, not by accident, not by any imaginary notion that something or other might do, but by actual experiment, discovered that it might be improved. He ascertained and published to the world that this machine could be applied, provided you moistened your flax; and if you applied it to the moistened flax, you could then spin away as fine as any female hand that could be produced in the world. I do not say finer, because it may be said, perhaps with truth, that whatever may be the advantage of steam in multiplying resources and producing cheapness and abundance, the human hand, after all, is the best piece of workmanship: if you are indifferent about price, the human hand is that which, in almost everything, will produce the most satisfactory piece of work. Now all this will be proved to your satisfaction. You will learn that Mr. Kay was at work upon this, I believe I am correct in saying not for months but for years; that he made machine after machine; that he tried experiment after experiment; that he was at the expense of hundreds of pounds. You will learn that he was not a novice intruding himself into the trade without an idea, and that by some lucky circumstance he stumbled upon the notion, and then sought to deprive the rest of the world of the benefit of it. Such an individual, if he does so, is entitled to the reward of his good fortune; but Mr. Kay is especially entitled to your protection, because he arrived at this discovery by a course of observation and experiment. Now that, Gentlemen, is the history of the improvement of Mr. Kay, and it is the history of the department of our manufactures and commerce in which that improvement has occurred. Now I will state to you this specification, and I do not think it will be necessary for me to trouble you with drawings and

Marshall

plans. The title is, "new and improved machinery for preparing and spinning flax, hemp, and other fibrous substances by power;" and you will observe that it is in reference to power only that the claim is made. He says, "Now know ye, that in compliance with the said proviso, I, the said James Kay, do hereby declare the nature of my said invention to consist in new machinery, for macerating flax and other similar fibrous substances previous to drawing and spinning it, which process I call preparing it; and also in improved machinery for spinning the same after having been so prepared; and in further compliance with the said proviso, I, the said James Kay, do hereby describe the manner in which I perform my said invention by the following description:—First, of the new machinery for macerating; and secondly, of the improved machinery for spinning, reference being had to the drawing annexed," &c. He then says, instead of the ordinary spindles in the roving-frame, I substitute twisters and rollers, but to which, being well known in the trade, I lay no claim as being any part of my invention. He then describes that the rovings are to be plunged into a trough filled with distilled or other soft water, at about summer heat, and that when all the air in the flax has been expelled, it is sufficiently macerated. "Having now described the new machinery for the purposes of maceration, and which consists only of the vessels marked B, and the trough of water marked C, I will proceed to describe the improved machinery for spinning flax and other similar fibrous substances." After maceration, the roving or sliver is led between an ordinary pair of retaining rollers and a pair of drawing rollers, "the drawing rollers ,*c*, *c*, move at a pace eight times faster than the retaining rollers, *e*, *e*, which retaining rollers I find answer better to be fluted. I place the drawing rollers only two and a half inches from the retaining rollers, and this constitutes the principal improvement in the said spinning machinery, for the roving being so completely macerated, would not hold together to be drawn out while in such a state to the ordinary length of the staple; but this very state when drawn in so short a length as here represented enables it to be spun very fine and evenly; for it should be stated that there is no elasticity in the fibre of flax, hemp, nettle-weed, or other the like substances; but when drawn by rollers so placed as aforesaid, and moving at the

Kay

relative speeds aforesaid, and in the completely saturated state aforesaid, the fibres themselves are pulled asunder and require to be twisted immediately, or the continuity of the thread would be destroyed. This position of the rollers is not necessary in the ordinary mode of spinning such substances as aforesaid, for in the ordinary process the elongation of the skim only is effected by the process of drawing, and not the elongation of the fibres themselves which compose the skim." And then he thus proceeds—"Now whereas I hereby declare that what I claim as my invention in respect of new machinery for preparing flax, hemp, and other fibrous substances, are the macerating vessels marked B, and trough of water marked C; and that which I claim as my invention in respect of improved machinery for spinning flax, hemp, and other fibrous substances, is the wooden or other trough marked D, for holding the rovings when taken from the macerating vessels, and the placing of the retaining rollers *e*, *e*, and the drawing rollers *c*, *c*, nearer to each other than they have ever before been placed, say within two and a half inches of each other for the purpose aforesaid," &c. That is Mr. Kay's specification.

Mr. Baron Parke—The wooden trough, and the position of the drawing and retaining rollers?

Sir F. Pollock—Are what he claims; but it is of importance that in all these matters you should look to what is the spirit of the invention. And I am quite sure that I am correct in stating that the modern view of the Learned Judges of the land is somewhat different from what was the case in former times. I do not believe that I have any occasion to call in aid any laxity of decision; certainly not; but I take it that the view that is now taken of a patent is, that, in whatever language it may have been described, however clumsily it may have been expressed, if the patent is an improvement it will be sustained; and if the man had made a wrong claim at the end, that would not prevent him from deriving the benefit of his discovery if it were a good one. The spirit of Mr. Kay's invention is this: he says I have succeeded in accomplishing a great desideratum; I will tell you how you may spin by power a very fine thread. If you macerate your flax in the cans which I present to you for that purpose, and spin it in the machine improved from the common-flax spinning machine by reducing the *ratch* from

Marshall

fifteen to twenty-two, to two, or two and-a-half inches, you will succeed. If you take my plan of macerating to another machine, or the shorter *ratch* of cotton, or the longer *ratch* of the old mode of spinning, it will not do; or if you bring to my machine cotton or the old flax sliver or roving, my machine will not do; my machine will only do when the flax, by some process of watering, is reduced to the condition that the fibres will come out at the length of two inches and a-half. That is the spirit of the invention; and upon that I rest my claim to your verdict; and I say, without hesitation, that it is conveyed in the specification that he has given to the world. It is quite plain from that, that what he claims is the mode of macerating, and that particular mode of spinning flax when so macerated; and I defy my Learned Friend to adduce any instance whatever of the spinning of moistened or macerated flax, in a *ratch* of two-and-a-half inches, or any other *ratch* than one varying from fifteen to twenty-two inches, till the time that Mr. Kay produced this patent. That is the interior of the cause. I gave you, before, the external history; and I think that, after looking at the external and internal history of this branch of manufacture, you must be satisfied of the plaintiff's claim to the merit of this invention. I have but a word or two to say as to what is the case on the other side. I am told that we are to have raked up against us a patent granted to a person of the name of Horace Hall, who did use water to a certain extent, and who did spin at a shorter *ratch*. Gentlemen, the only use of water in Mr. Hall's patent, if that should be set up to-day, is that one of the wheels in its lower part—one of the retaining wheels in its lower part, dips into water, and as far as the slight, momentary, imperfect moistening by that wheel just dipping down into water or passing the flax partially through water—just for an instant—as far as that is to be considered as supplying water in substitution of what is applied in the hand-spinning, certainly Mr. Hall had announced to the world something of that sort. And Mr. Hall undoubtedly shortened his *ratch*; for if you examine its position on the plan accompanying his specification, the *ratch* is five inches by the scale instead of the old *ratch* of eighteen or twenty inches. Gentlemen, the best mode of ascertaining whether a patent is useful or important is to inquire the result of it. Was Mr. Hall's

Kay a

patent ever worked? It was granted so far back as the year 1814, and it never succeeded—never; and every manufacturer—if I could get Mr. Marshall himself into the box, he must give me this answer to the question—Did you ever know Hall's patent to be useful to the public? He would say—never; there was a vice in that which prevented it from succeeding. You must, Gentlemen, by this time, see what that vice was. The machine was not adapted to the long *ratch* required by the fibre unmoistened, nor to the short fibre when so moistened as to be capable of being pulled out. But Mr. Hall's machine had been occasionally working, either upon some imperfect specimens, or he had moistened some flax not enough to answer one purpose, but still sufficient to spoil it for the other. He had got some flax, too wet to be used in that (the old machine); too dry to be used in this (Mr. Kay's machine); but it would be impossible that you could be certain how he got the same degree of moisture always to produce that effect. I believe he thought he had discovered the true principle; but when carried into effect it was not worth a farthing. From that time down to 1825, when Mr. Kay published his, it was not worth a groat. No man got Hall's patent; no man worked it. All the fine flax was spun by hand in spite of it, and would have continued to be so but for Mr. Kay's patent. So much for Hall's patent; and I do not know whether we are to have such evidence or not; but if every mechanic in the kingdom—if every civil engineer or mechanical man were to come here to tell you that in his judgment the one is only an imitation of the other, I think I might rely on your impartiality and good sense justly to discriminate for yourselves, and when you come to understand the subject, as I am sure you will before the cause is over, to judge for yourselves from the history of the manufacture itself. Do not tell me anything about Hall's patent if it did no good; tell me about Mr. Kay's patent, since which the trade has thriven as you have heard. But I am told there was another attempt; that Mr. Busk, somewhere about 1817 or 1818, proposed to himself a series of experiments for the purpose of improving the spinning of flax; and that he had a person in his employ of the name of Westley; and I understand that it is to be said that they did something which is to be considered an anticipation of Mr. Kay's discovery, and

Marshall

that therefore Mr. Kay's discovery is null, and the patent void. Gentlemen, there was a trial in the year 1831, to which I alluded before, when Mr. Kay brought an action against a person of the name of Renshaw, who set up a defence that the patent was void, and Westley was then called as a witness. We were rather taken aback, because, having brought an action on a contract, we went there to enforce the contract, and we did not expect to have to discuss the patent. But we did discuss the patent, and his Lordship left the case to the jury, who decided in our favour. On that occasion, Westley came to do all the benefit he could to the defendant in that cause; and it is not unimportant to state, that a witness came from Mr. Marshall's to prove the price of spindles. He came for the defendant, who was a manufacturer at Manchester. The action was brought to recover the price of setting up some spindles, and he proposed to pay the plaintiff as an ordinary workman, and not as a patentee. Westley detailed what he had done, and that Busk had endeavoured to carry into effect Hall's patent. If we have him to-day you will hear about that. The result was not important; I do not present the finding of that jury as anything which is to bind you. But I use it for this purpose. The patent had then been running six years, and from that time down to the present Mr. Kay has been known as the inventor, and he has received from scores of persons in the trade that contribution which they thought due to his merit, and Mr. Marshall and his partners resist that which I trust will be found to be his due. I am told that there is to be another objection. "You have said in your specification that you claim specially for putting the rollers nearer to each other than they have ever before been placed." We heard this argument in the Court of Chancery; and one of my Learned Friend's observations was—"How can a man have a patent for putting two things nearer to each other? Surely, you would not take out a patent if you were to put two wheels of a carriage closer than they were before. There is the machine; these two wheels are separate from each other by twenty or twenty-four inches, will you argue that you cannot put your wheels nearer to each other? Ridiculous!" Why, Gentlemen, if these wheels must be at that distance to spin dry flax, and those wheels must be at this distance to spin wet flax,—if taking the wet fibre to that machine there would be a discontinuance, because the fibre is not long enough for the *ratch*,—if bringing the dry flax to this machine there would be a fracture, because the retaining roller would catch the long fibre, and the drawing-roller would pull and snap the roving, because the length of the fibre being from fifteen to twenty inches, it could not be drawn out, being actually retained,—if the true secret of spinning be this, that whatever be the length of the fibre, you must take care that the interval between the drawing and the retaining rollers shall be a little longer, so that whatever you get hold of at one end shall not be held at the other,—if you go along with me in this, you will see that Mr. Kay has led to this, and that it is most important. Suppose, now, that a new substance were discovered; suppose we could import from New South Wales a plant that would yield a fibrous substance in great abundance, what have you to do to spin it? What but to gather it, to hackle it, to macerate it?—and then with a powerful magnifier to get the length of the fibre, and you know your *ratch*. The fibre of flax is one thing, that of cotton is another; the fibre of dry flax is one thing, that of wet flax is another. I do not claim to have discovered that so as to have a patent for it for all purposes; but Mr. Kay has formed a process of spinning with wet flax, and described the distance at which it could be spun; and if he has done that before any one else, he is entitled to your verdict: and I hope that Mr. Marshall, who wishes to deprive him of the reward of his labours, will not be gratified to-day. I am told that there is another thing to be dwelt on. In Mr. Hall's patent he adverts to some machine for cotton spinning; and I am told that there is in his specification an expression intimating that the yarn delivered by his machines may be spun in the usual manner by the machines used for cotton spinning; and, upon the strength of that, this patent is to be considered as null and void. This expression is to be found in his specification, "And lastly, I, the said Horace Hall, do hereby declare that my machinery may be multiplied or connected by various sets or parts together, and that the parts may, as choice or convenience may require, be varied as is and has been commonly done in the structure of machinery, and is well known to competent workmen in works of this and the like nature." So that from

Mr. Hall telling us that his machine may be varied, every person who follows in that is to be considered as having taken a leaf out of his book. Mr. Kay has introduced an improvement of great merit, and he wishes for his reward. "But you have only varied Mr. Hall's machine; and as he has patented a variation of his machine, you cannot be entitled to any patent." This may be a very amusing argument to every body but Mr. Kay; but it can scarcely be expected to prove satisfactory to him. There is another matter which I should mention. The first part of the plaintiff's invention is for moistening the flax, for without being moistened it will not do. Mr. Kay's mode of moistening was by placing the rovings in tin cans fixed into other vessels, bored with holes like a cullender, and set in a trough filled with distilled or other soft water, at about summer heat, and repeatedly pressing it down with a plunger under the water, and after having steeped it five or six hours, turning the macerating vessel over, finding the end, and applying it to the machine. There is no person connected with general mechanics who would not perceive that that might be done in ten thousand different ways. It is quite obvious. There is not any person connected with general mechanics who would not perceive that the moistening might be produced in as many ways as there are minds. It was soon discovered that a more rapid, though it turns out to be a less perfect, mode of maceration would answer the purpose of the general manufacturer; and accordingly, as heat saves time in every process of dissolving, as all of you are perfectly well aware, the water was made a little hotter, and instead of being put into cans and left to steep for six or eight hours, the roving was passed through a trough of hot water, which brought it into the state to which Mr. Kay brought it by his process, which I will call No. 1. Now I admit that: it is so. But I believe I can satisfy you that if you want to do the thing perfectly, and to produce the finest and best work, Mr. Kay's is the best mode; because, although the other does it more rapidly, and sufficiently well for ordinary purposes, it does it not so well and effectually as is required for fine work; because in this country, as you know, the cheaper an article is manufactured, and the more rapidly it is produced, the more readily it is disposed of than an article which is a little better but a great deal dearer. How that will

Kay

affect the present issue I do not at present perceive, because we are not here to say whether Mr. Marshall, by what he has done has invaded the patent, but whether Mr. Kay has discovered something new. Now supposing the cans are new, as they certainly are, and supposing that the mode of spinning is better, as it certainly is, if it can be found out that a cheaper mode has been discovered, and one better than the cans, that will not prevent Mr. Kay's invention from being new, nor will it prevent it from being useful, as it is. If, instead of being hundreds and hundreds per cent. better, as it is, it had been only one per cent., it is new; and if it had only paved the way for something better, the plaintiff is entitled to your verdict. Having now given you a short historical test from which to judge of the value of this invention, I will next take a sort of practical test, and I think I can present to you the best practical proof that Mr. Kay's is a new machine, and that it is a useful and improved machine. I mean that part of it which relates to the spinning. I will say nothing about cans and maceration, but will take only the machine. By Mr. Kay's machine you cannot spin cotton; you cannot spin flax in its old state; but you can spin macerated flax, by whatever means that maceration has been produced, and you can spin it by that machine only. Take a cotton machine and endeavour to alter it by altering the wheels, but in that machine you can spin nothing but cotton. Take a machine on the old plan, and you can spin nothing but dry flax. Take Mr. Kay's machine, with the *ratch* at two and a half inches, and you can neither spin cotton nor dry flax, but only macerated flax. You have a machine that will do cotton, and nothing else; you have a machine that will do macerated flax, and nothing else; and a machine that will do dry flax, and nothing else. If that does not stamp upon each machine an individuality that gives it a special character, and establish it in your minds to be an invention, then undoubtedly I have considered and prepared myself to address you altogether in vain; but if you perceive that there are these three machines, that each of them requires a particular *ratch*; that each of them will do its own work and no other; and that each of them requires a *ratch*, which in a cotton machine is very little, in the flax machine, when wet and macerated, very little more, and in the machine for dry flax still more, because

Marshall

the fibre is not of the same length; if you discover that each machine has that individuality stamped upon it, then there is no need of the observation brought from the Court of Chancery,—"Oh! dear, what is there new in putting the rollers nearer together, as near as in cotton, or as near as in spinning dry flax?" It is easy to say "Is that all?" It is all; and a more important all was never presented to the attention of a jury, or called for the gratitude of the country to the party who presented it; for it is that discovery alone which has raised the flax manufacture to the extent to which it has arrived, and which bids fair, from the progress which it is continuing to make, to rival what I may call the sister manufacture of cotton in wealth, prosperity, and importance to this country.

The plaintiff's patent and specification were then put in and read.

Henry Fazakerley sworn. Examined by *Mr. Starkie.*—In 1825, and for five years before that time, I was roving-master to Mr. Kay, at his spinning mill at Preston. Previous to 1825, Mr. Kay had made experiments in flax in a private room to which I had not access. In June, 1825, I removed to Penny Bridge, near Ulverstone, to superintend a mill which the plaintiff had recently set a-going there; he used it for spinning flax; there was some old machinery there. The spinning ratch was twenty inches between the retaining and drawing-rollers. Mr. Kay began to work machinery there on his new plan. I remained there seventeen weeks, and worked the new plan during the time I was there. There were six spinning frames; the number of spindles was forty-eight on a side, and there were two sides, which made 576 spindles altogether. While I was there the mill was visited by a great number of people, who came to see the machinery. I am now with German, Petty, and Co., extensive spinners of flax at Preston; I have been with them nearly three years. The plaintiff has a son with them: I have had a good deal of experience. At the time I was at Penny Bridge Mill the rovings ran down into small cans, which went into other cans that had holes in them, and as they were filled we took them down into a trough and steeped them there. This is the method described in the patent. We had good soft water; it was

Kay

summer; we had no occasion to warm the water, but we had a little soda when wanted. A plunger was used in pressing the rovings down in the cans. After the flax had been macerated the cans were brought up and turned upside down: we found an end and then put it over the roller. The roving was generally steeped in the can from five to six hours. The distance of the ratch from nip to nip was two inches and three-eighths; I cannot speak to the distance from where the roving is taken hold of by the first pair to the place where it is taken hold of by the second pair. The measurement from centre to centre was two three-eighths to two and a-half inches. After passing the drawing-rollers, the thread was immediately spun as at present. That was the method used by Mr. Kay at Penny Bridge. Since that period some alteration has been made in the mode of maceration, and, instead of using the macerating can, the roving is passed through a trough of water. The water is occasionally hot, but not always. Passing the roving through the trough is in some points better than the former plan, and in some it is not. It saves from waste generally, but when the flax is hard it is better to be macerated in the cans, and when so macerated the yarn is of a better quality than when run through the trough. The trough saves waste, but the cans make better yarn. I cannot say which is most expensive. When the maceration is done in going through the trough, it was not got so well done as by the cans in the trough. If the wheels move quickly the thread is a very short time in water. It is frequently not sufficient, as we have to wet the rollers to give it more wet; but when we macerate by the cans we are always sure of having it sufficiently wet. It is when the flax is of a hard quality that it generally happens not to be sufficiently wetted in passing through the trough. I do not know what was the greatest number of *leas* spun to the pound before 1825, as I knew nothing about *lin* or line. German and Petty have about 17,000 spindles going. Macerated flax could not be spun upon a cotton machine. The rollers would not deliver it, because they would not have power to draw it; and, another thing, it would not make a thread; if it was a thread it would be a flat thread. We could not spin cotton wet; cotton must be warm, or it would not spin at all. Cotton passes through three pair of rollers; but in

Marshall.

flax there is only one drawing—one pair of rollers. It would not answer the purpose to have more than one drawing of wet flax, because the macerated flax will not do to be drawn above such a distance. It must be spun immediately after it has got through the drawing-rollers.

Mr. Baron Parke.—The mode of maceration, the troughs, and the distance, is what the plaintiff claims as new.

By *Mr. Starkie.*—Would it do to draw wet flax through another set of rollers before it is spun?—No.

Cross-examined by *Mr. Cresswell.*—I cannot say why wet flax cannot be drawn through two pair of rollers; I know it practically. I once tried it, but it was only a temporary thing of my own. Cotton rollers will not deliver the flax; if macerated it sticks to the rollers, and they cannot get it off. The back roller is sometimes lead and sometimes iron; the middle roller is made of wood, iron, or lead; and the third roller is covered over with flannel and leather, and it sticks to that leather, and it will not deliver it. I cannot speak to whether it is the leather that prevents it from delivering the flax. I have no idea at what relative speed the drawing and retaining-rollers move in that machine. In the new machine that Mr. Kay put up at Penny Bridge, the first roller ran about sixteen revolutions to the back-roller revolving twice. I do not know whether, supposing a roller running at an intermediate speed had been introduced between these rollers, it would not have been a drawing-roller, as compared with the back pair of rollers. I have been accustomed to machinery for thirty-two years, yet cannot answer that question. I have been with my present masters three years; they never use the cans in the wetting process, but the process through the trough. The plunger was not used when the flax was coming down into the cans, but afterwards. Messrs. Sleddon, of Preston, made the first machines that my master, Mr. Kay, used. Mr. James Birkett was their foreman. The macerating cans were used during the seventeen weeks I was at Penny Bridge. We had not then got the troughs, nor tried one. I have never seen the macerating process used but during those seventeen weeks. During these seventeen weeks the hot water and the trough were not used. By using the macerating process to hard flax it

Kay

produces a finer shade, and does not stick to the trough: I mean, therefore, to say that the maceration would be better for hard flax than the other process; but notwithstanding that our manufacturers use the other. My employers are now running the highest at 110 *leas* to the pound. They do not get up to 200; I cannot tell the highest number spun at Penny Bridge; I will leave others to speak to that.

Re-examined by *Mr. Starkie.*—I did not know anything about the flax manufacture before 1825: I had been engaged in the cotton manufacture.

William Smethurst, examined by *Mr. Watson.*—I was in Mr. Kay's employment down to 1828; before 1826 I was engaged in cotton spinning. Before 1825 he had been making experiments. I did not assist him, but his sons and brother-in-law did. In January, 1826, I went from Preston to Penny Bridge. Mr. Kay carried on flax-spinning there. I had the management of the works there when they were at home. Before that time I did not know anything of flax-spinning. Mr. Kay used his new machines there. There were some old machines in another room. The distance of the rollers on the new machines was 2½ inches, and I dropped one down to 2¼. Many persons came to see the machine; we had them from Scotland and Ireland, and various parts of England. I remained at the Penny Bridge flax-mill nineteen months, and then went to Mr. Kay's mill at Manchester. It was a new flax-mill that he had built. At Penny Bridge the macerating cans and plunger were used; we used warm water in the winter, but not in the summer; the water was soft as need to be. When we went to Manchester we used the trough now adopted. We used both hot water and cold, and kept it as near summer heat as we could. We never used the cans at Manchester. At Penny Bridge we had some machines with macerating cans, and machines with troughs. When the trough is used the flax is only macerated as it goes through. Strong flax requires more maceration than the fine flax. I never was versed in the old mode of spinning; but I think it would not do to spin wet or macerated flax in the old frame, on account of the distance of the ratch. I should think it would come out thick and in lumps, and that there would be no yarn made at all from it. I

Marshall

cannot say whether we could spin macerated flax in a cotton-mill; the machinery is quite different. In the flax-spinning machine, as at present used, the roving stands quite dry, and it is macerated as it goes through the trough to the back rollers. The roving should go through about twenty-one inches of water. The front or draught roller may go about seven or eight times as fast as the back or retaining roller, or faster if wanted. In my opinion, the same quality of flax that was formerly spun to forty *leas* in the pound, can, by this machine, be spun to 100 or 110. I am now in the employ of Messrs. Newham; I had been seven years last March in the flax preparing room. We have both old and new machines; 9,000 spindles in all, and 8,000 of them of the plaintiff's kind. We macerate upon Mr. Kay's plan, all but the can; with the trough, not his patent plan. I was at Lancaster, at the trial there, and was called as a witness.

Mr. Cresswell.—I object to all this as irrelevant. It is introduced to produce an effect.

Sir F. Pollock.—It is to show an acquiescence after the trial.

Mr. Baron Parke.—The decision in that case cannot bind the parties in this. I do not see how it is material; but I will not exclude it.

Sir F. Pollock.—If I shew that one of Mr. Marshall's men was there—

Mr. Cresswell.—Which you cannot do.

Mr. Baron Parke.—No matter whether other people acquiesced or not; it cannot bind Mr. Marshall. You had better not go into that.

Sir F. Pollock.—Then I will not press it. I will withdraw it.

Mr. Cresswell.—But I will not allow him to withdraw from my observation.

Mr. Baron Parke.—I shall tell the jury they are not to regard the verdict at Lancaster.

Sir F. Pollock.—I will either go on with the evidence or withdraw it.

Mr. Baron Parke.—Oh, withdraw it.

Sir F. Pollock.—Very well; but if they call the same witness, I shall put the question.

Cross-examined by *Mr. Cresswell.*—We have a room for tow spinning; we have fourteen engines; we spin

Kay

some dry and some wet. I cannot tell the length of the ratch for spinning dry tow; I never measured it. I do not know if we can spin tow at as long a ratch as that old frame; I am not a spinner. There are retaining and drawing rollers, but I cannot speak to the distance between them. They spin wet tow as close as flax; it is upon the same principle. It is macerated in the trough and drawn in the same way. The fibre of tow is of various lengths; there is at four inches, at six or seven inches, and there is at a foot. With a fibre at four inches I can't tell what would be the length of the ratch, according to the principle of spinning. I cannot, upon my word, give an answer as to what should be the length of the ratch in dry spinning. I am not in a spinning room, but in a preparing room. I was in a cotton factory forty-four years, but always in a preparing room. We spin cotton of different lengths on the same machine, by altering the ratch according to the length of the staple; New Orleans at three quarters of an inch; Bode's at half an inch. We had slides for the rollers in the old machinery at Penny Bridge, so that we could lengthen the ratch as we wished. The model of plaintiff's machine in court has a slide, so that we can lengthen the ratch or reduce it. It is the bottom roller that lifts up. The slides vary from one and a-half to three and a-half inches. The common length is two and a-half; I once dropped one down to two and a-half, and it spun very well. That was at Penny Bridge. I never tried one nearer than that. Great improvements have been made in machinery lately; we have had a great improvement in making rovings at our place, as in other places. We have two or three sorts of machines, so that we know the various systems. We have machines made by Messrs. Taylor and Wordsworth, Messrs. March and Maclean, and Messrs. Taylor and Higgins. We draw through *gills*, and we have some slivering frames that there are very few in England like. There are not more than one or two in England like them. They were invented by Mr. Stephenson, our manager. He has not got a patent for them; they have been seen by very few people. Our rovings are twelve *leas* for fine numbers; that is a great improvement, and it enables us to spin much finer yarn than formerly. I have not been in the linen trade longer than ten years. I cannot say

Marshall

what was the highest number to which we got our rovings when I first knew the trade; but there has in fact been a great improvement. When we had got our rovings macerated and turned over at Penny Bridge, before we got the troughs, the yarn passed over a high rod, but it wanted watching a very little to prevent it getting entangled. At Penny Bridge we spun about seventy *leas*; but we have spun to 110 at Messrs. Newham's.

Re-examined by *Sir F. Pollock.*—The watching was required to prevent the roving coming up in a lump. It was watched by little girls at about 1*s.* 6*d.* or 2*s.* a-week.

By *Mr. Baron Parke.*—Now the rovings are put upon bobbins and no watching is required. It is no additional expense to put the rovings on bobbins instead of into the cans; it is much the same.

Mr. Joshua Wordsworth, examined by *Sir F. Pollock.* —I am a partner in the house of Taylor, Wordsworth, and Co., Machine Makers at Leeds, and I have been in that business about four-and-twenty years. I am acquainted with most of the different machines used for preparing and spinning flax. I know something of the worsted trade, but not much of the cotton trade. I have been in the habit of seeing places in England, Scotland, and Ireland where machines are used. I am acquainted with most of the mills in Yorkshire and Lancashire. Before 1825, when Mr. Kay's patent became known to the public, the old mode of spinning was generally in use, except the plan of Horace Hall, which was tried at Mr. Busk's, at Hunslet. It did not succeed. I was acquainted with probably 100 places for spinning flax before that time, and most of them used the old sort of machine. In that machine the ratch was made to work up and down, probably from fourteen inches to twenty-four inches. The roving bobbin is turned round by pulling at the end of the flax. I have known the difference of speed between the drawing and the retaining rollers vary from ten to eighteen. That is called the draught or speed, so that the drawing rollers have gone ten times or eighteen times as fast as the retaining rollers. Before Mr. Kay's patent, I have known flax spun at a ratch of four inches. That was by Horace Hall's patent; it varied from four

Kay a

and a-half to seven inches. I never saw it in operation: It has been brought to our shop to be re-made up again. Not to my knowledge was it ever adopted anywhere else. The parts of the machine were brought to our shop, and we re-made them back again. They began to come back in 1817, and we received in portions, until we had altered the whole. They ceased about the latter end of 1817. We altered the ratch of Horace Hall to the old principle. With that exception, I never knew a ratch of less than fourteen inches. I never knew water introduced before Mr. Kay's patent, except by means of a sponge cloth wetting the drawing roller. In what way Horace Hall did it I do not know; it was only the drawing part that they wetted. In spinning dry tow there was a different ratch, varying from four and a-half or five up to nine. We have made a great many of Mr. Kay's machines; I suppose some hundreds. They are much used in the flax trade; more than any other in England or Ireland, but in Scotland I think probably there may be more upon the old plan, as they run chiefly upon heavy yarns. Kay's machines are well known in the trade, and persons ordering machines say whether they want them on Kay's plan or the wet plan upon the old system. There are some made for spinning wet and some for spinning dry upon the old system. When used upon the wet plan, the pressing roller is merely damped a little; and the flax is not at all saturated with water. That pressing takes place after the drawing is done. A great many of the old machines are used quite dry. The length of the ratch is made to vary to suit the different lengths of the flax. The variation in the length of the flax is probably from fifteen or sixteen inches up to thirty-two inches. I have known it vary so much, but I cannot be positive as to the exact length. Before Mr. Kay's patent the finest yarns were spun by hand; up to that time forty or fifty *leas* was considered very fine spinning to get by machine. I cannot speak to how high they can spin by Mr. Kay's machine, but I have seen as high as 200 *leas* to the pound that had been spun in Leeds. The yarn spun by machinery is much evener than that spun by hand; it is also more regular, better twisted, and cheaper. When I first saw Mr. Kay's plan it was new to me. I had then considerable experience in the trade, and if there had been

Marshall

such a mode of spinning before, I think I should have heard of it, or seen it in some of the mills. In my opinion it is useful. I went to Penny Bridge in 1825, with Mr. Atkinson, of the firm of Hives and Atkinson, and Mr. Walker, of the firm of Titley, Tathams, and Walker. Mr. Kay was with us. We went to inspect his mode of spinning; we saw it, and it corresponded with the patent and specification. I had never seen fine yarns spun by machinery of that kind before. In a few months afterwards Mr. Kay sent a machine and some preparings to Mr. Atkinson, of the firm of Hives and Atkinson, and they began to be very much used in Leeds after that time. Their use is now much increasing. The flax trade has increased very much since this invention. When we were at Penny Bridge, the mode of macerating the flax was that described in the specification; they put the rovings into cans, and then into long troughs, and let it steep. That mode of maceration is not the only mode in which it could be done; there has been a better plan adopted since; that is, by passing it through the trough. The other would make equally as good yarn, but there was more waste in it. I do not know who first used the plan of the trough, but many persons tried it. Mr. Atkinson tried it first in Leeds. The object was to keep the flax together, and not to make quite so much waste. Though the maceration by the trough is better than by the can system, no doubt the can system with the plaintiff's mode of spinning, was a useful invention. Suppose parties were tied down, by Act of Parliament, to use nothing but the can system, it would no doubt be better than the old system. The yarn that is wanted could not be produced without.

By the *Judge*.—I am not aware of any mode of wetting by cans invented at the time of Mr. Kay's patent.

By *Sir F. Pollock*.—Supposing flax to be very hard, I should say that the can system of maceration would probably be better, as hard flax requires a longer time to soften than fine flax does. It makes the flax draw finer; but the can system is more expensive than the trough system, both in waste and requiring an extra hand to the spinning frame. The hotter the water is the faster it macerates. It is generally used from 90° to 100°; as hot as the children can bear their hands in it. The fluting of

Kay. a

the rollers has been varied a good deal, from twenty-four to forty-two flutes in an inch.

Mr. Baron Parke.—But that is no part of the invention, is it?

Sir F. Pollock.—No.

By *Sir F. Pollock.*—Flax wetted for the old machine would not be fit for the new one; and flax macerated for the new machine would not be fit for the other. The ratch of the old machine would be fourteen to twenty-four inches; that of the new machine from an inch and three-quarters up to three inches. I knew Westley, who was manager for Busk, very well. He frequently came over to our shop. We were employed by Busk to alter his machines. Westley afterwards employed us on his own account. We made some machinery for him, but not a great deal. They were chiefly of the old construction, except one mule that he had in the place. He gave up business in 1824. I valued his machinery in company with Mr. Lawson. There was no machine like Mr. Kay's on the premises. I also valued Busk's stock, after he gave up, but I saw none like it there. I never saw or heard of their having produced any fine yarn such as is now produced by Kay's machine. There is no difference between the machines I saw at Penny Bridge and the machines now used and called Kay's machines.

Cross-examined by *Mr. Cresswell.*—I have been accustomed to machinery more than thirty years; I am not acquainted with cotton spinning but with flax and worsted spinning. That (a machine produced) is used for worsted spinning. The staple of worsted varies a good deal; from two and a-half to twelve inches; and the ratch for spinning varies according to the twist that is put into the roving. When the roving is much twisted it requires a longer ratch; and when it is but little twisted the ratch is shorter. A slightly twisted roving is weaker than the other, and there would be danger of the continuity being broken with a long ratch. In fixing the length of the ratch all these circumstances would have to be taken into consideration to make it draw well; so that an experienced spinner would vary his ratch from time to time, according to the nature of the roving and the material that he wished to put into the machine. The worsted machine is made with a slide for that purpose.

Marshall

The principle of varying the length of the ratch according to the material that is to be spun has been long known among spinners; long before Mr. Kay's patent was taken out. The consequence of the maceration or thorough wetting in the trough is that a shorter ratch is required in flax spinning. The extent to which the process of maceration is carried would be an ingredient in deciding the length of the ratch. Supposing there was only a partial wetting, the ratch would require to be longer; the more considerable the wetting the shorter would be the ratch; so also the comparative fineness or coarseness of the roving would be an ingredient in deciding the length of the ratch. The yarn that I saw spun to 200 *leas* must have been spun from a very fine roving. Such a fine roving as that passing through hot water would spin at a good deal shorter ratch than two and a-half inches. The very high numbers are in fact spun with a shorter ratch than that; I dare say about an inch and a-half. I have seen tow rovings almost as fine as flax. There has been a great deal of improvement in the roving machines. This (another machine produced) is a tow spinning frame upon the old principle. The ratch is about four and a-half inches; you could not have spun flax upon that when dry, in consequence of the shortness of the ratch; and if you had wetted your flax with the trough at the back the ratch would have been too long. If it be not thoroughly macerated, the rollers must be extended to the length of the fibre, or it will not draw at all. I dare say that that which appears to be the ultimate fibre in flax varies in length according to the extent to which you macerate it.

Mr. Baron Parke.—The maceration cannot vary the extent of the fibres.

Witness.—They vary a little according to the strength of the draught—according to the different speed of the drawing rollers and the retaining rollers.

By *Mr. Cresswell.*—You must wet a roving sufficiently to make it draw, or the machine will break it; it will not draw at all unless sufficiently macerated. (A working model of Horace Hall's machine was produced.) That is something similar to those we broke up. I do not remember how Horace Hall prepared his rovings. I do not understand preparing, as I never saw them at work. I believe his bobbins were brought wet to the trough.

Kay

a

His drawing roller and both the retaining rollers revolved in a trough of water. The yarn passed under the first roller, and therefore through the water. The length of Horace Hall's ratch varied from four to seven inches, measuring from the point of contact between the drawing roller and the retaining rollers; but measuring from the point where the roving left the retaining roller to the point where it came in contact with the drawing roller, the distance would be about three inches. The old machine varied from fourteen to twenty-four inches. The rovings they used were much coarser than they use now. They would spin with a bigger draught and heavier yarns. If they made fine rovings, their being able to spin with a shorter draught would depend upon the length of the fibres. If the flax was long, although you made the roving fine, you could not spin it with a short nip. In cotton machines there is also a sliding ratch, so as to vary it according to the length of the staple. Adapting the length of the ratch to the length of the fibre has been the fundamental principle of dry spinning since Arkwright introduced it. And the difference made by wetting the flax is, that you may deal with it as if it had a short fibre. The principle of making a machine for short fibres was known before for cotton.

Mr. Baron Parke.—But it was not known that it could be applied to flax.

Sir F. Pollock.—Precisely so; and that with the other part makes up the patent; and, because they have taken a part of it, they think they can knock up the whole.

Mr. Cresswell.—The question here is whether there is anything new in the improvements of Mr. Kay.

Mr. Baron Parke.—Whether it is a new invention? Whether the plaintiff shewed that flax might be dealt with as if it had a short fibre?

Mr. Cresswell.—The point is, whether the alteration of the ratch from twelve or fourteen inches, whatever it was, down to two inches and a-half, was new?

Mr. Baron Parke.—That is as applied to macerated flax. I have not to inquire here whether the patent is good, or whether a patent could be taken out for such an invention; the only issues are whether this invention is new, and whether it is useful.

Mr. Cresswell.—According to my understanding of

Marshall

what passed in the Court above, the point intended to be raised, was, whether there was any *such* novelty in this invention as would sustain a patent; and that is the broad question we have come here to try.

Mr. Baron Parke.—That is not the issue directed to be tried.

Mr. Wightman.—The issue is whether the plaintiff found out or invented any new and improved machinery for preparing and spinning flax, &c., by power.

Mr. Baron Parke.—As in the said bill of complaint letters patent and specification is alleged.

Mr. Cresswell.—Now I apprehend that that raises the question of novelty.

Mr. Baron Parke.—I shall go to the jury to find whether spinning macerated flax at short distances, is new, and indorse upon the record as the case stands, that parties have been in the habit of using machinery with ratches of various lengths, but that it was not before known that flax could be dealt with as having a short fibre; and so leave the Lord Chancellor to deal with it as he may think proper. Is not this principle of macerating new?

Mr. Cresswell.—As applied to flax I admit that it is, but not to the spinning at a short ratch, for it was shortened before.

Mr. Baron Parke.—To anything like two inches?

Mr. Cresswell.—Horace Hall's ratch was four inches.

Mr. Baron Parke.—The application of macerated flax to machines of short distances there is no doubt is new, and according to the evidence each part is new.

Mr. Cresswell.—The principle of reducing long flax to short flax no man dreamt of denying.

Mr. Baron Parke.—Whether he could have a patent for that because he used the sliding ratch, which was in use before, is not a question for the jury, but a question of law; the other is not a question of law but of fact. We had better take a verdict at once for the plaintiff, and indorse the special matters on the postea.

Mr. Cresswell.—Will your Lordship state what you will endorse, that I may know what course to take?

Mr. Baron Parke.—I should endorse that they have been in the habit of using the machines so as to adapt the

Kay

ratch to the staple of the commodity to be spun, whatever it was, but that it had never been known before the plaintiff's patent that flax would spin with so short a ratch.

Mr. Cresswell.—But this fact must be taken, that Hall reduced the ratch to four inches.

Mr. Baron Parke.—I should say that Hall reduced the ratch to four inches, but that his machine did not answer.

Mr. Cresswell.—I shall give some evidence upon that.

Mr. Baron Parke.—But, for the saving of time, you might take it that the plaintiff first spun at two inches and a-half.

Mr. Cresswell.—I believe there is no question that till this patent came out, flax was not spun at two and a-half inches.

Sir F. Pollock.—I believe it may be taken upon Mr. Wordsworth's shewing, that the very high numbers are now spun at a ratch of an inch and a-half.

After some further conversation between Counsel, it was agreed to take a verdict for the plaintiff on both issues, subject to the special endorsement on the postea; but, before the terms of that endorsement were finally settled, some further questions were put to Mr. Wordsworth, and Mr. Thomas Birley, of the firm of Birley and Co., of Kirkham, in Lancashire, was also examined. *Mr. Cresswell* also read two passages from Horace Hall's specification; in one of which Mr. Hall said—"And I do pass my hemp, flax, or substance containing fibre, from the bobbin, A, upon the comb, C, C, and between the rollers, D and D, by which action the same becomes combined and drawn out, and becomes damped by reason of the roller, D, revolving with its lower surface in water;" and the other passage stated—"Fig. 6, is a side view similar to fig. 3, but shewing R, R, R, R, a trough holding a solution of soap or other well known solutions fit for the purpose, in which the lower surfaces of the rollers, A, B, and D, are plunged, and the said hemp, or flax, or substance containing fibre, becoming wetted therewith, is made more lax, and the fibres thereof slip past each other with great ease."

A verdict was accordingly entered for the plaintiff, on both issues, the following special matter to be endorsed.

Marshall.

"That before the granting of the patent, hemp, flax, and other fibrous substances were spun by machines with slides, by which the ratch was varied according to the length of the staple or fibre of the article to be spun, and that has been the fundamental principle of dry spinning known and used before the granting of the patent; the ratch having varied, in cotton spinning, between seven-eighths of an inch to an inch and a-quarter; in flax or line spinning, from fourteen to thirty-six inches; in tow spinning, from four to nine inches; in worsted spinning, from five to fourteen inches—but before the granting of the patent it was not known that flax could be spun by means of maceration, as having a short fibre, at a ratch of two and a-half inches, or about those limits; but before that time, Horace Hall had taken out a patent for 'an improved method of preparing and spinning hemp, flax, and other substances containing fibre,' with a specification (containing, amongst other things, the two passages last before quoted,) &c.; and the machines manufactured according to that patent were constructed with a ratch of four inches and three-quarters."

A great number of witnesses were in attendance on the part of both the plaintiff and defendants, but the Judge thought it unnecessary to proceed further with the case, having obtained the main facts on which the future decision as to the validity of the plaintiff's patent, in the Court of Chancery, will depend.

KAY *v.* MARSHALL.

In the Court of Chancery at Westminster, before the Master of the Rolls (Lord Langdale), June 9, 1838.

THIS suit came on upon exceptions taken by the defendant to the report of the Master, to whom it was referred to settle a case for the opinion of the Court upon the finding of the jury on an issue which the Court had directed.

Mr. Pemberton and *Mr. Cresswell* appeared for the defendant, in support of the exceptions; and *Sir F. Pollock* and *Mr. Kindersley* for the plaintiff.

Kay v.

It appeared that the plaintiff had taken out a patent for the invention of a new machine in the process of dry spinning by power, in the drawing of flax, wool, and cotton, as well as all other fibrous substances, by means of maceration, effected by two or more sets of rollers, and had filed his bill against the defendant for an infringement of this patent. Upon the hearing of the suit an action at law was directed to be brought, in order that the jury might find the facts of certain disputed statements which would be the foundation of a case to be settled by the Master for the opinion of the Court, and the pleas which the defendant was to plead were directed to be, that the invention was not new, and that it was not useful. The action was tried before *Mr. Baron Parke* at the York Assizes. Evidence was given to shew that the original process was discovered by Arkwright in 1769, and that the present invention was an attempted improvement upon it. The defendant had also evidence to prove, that a Mr. Horace Hall had, before the plaintiff's patent, invented a machine to effect the same purpose, and procured a patent. The plaintiff contended that Hall's invention was useless, had been tried, and did not succeed; that all but one manufacturer, Busk, used the old machine; and that Hall's machines ceased to exist at the end of 1817. The jury found a verdict for the plaintiff on both pleas—viz. that the invention was new and useful, and they also found several facts, which, by the Judge's order, were endorsed upon the postea. After the trial, the Master was attended, and settled the case, and made his report, to which the defendants now excepted, upon the ground that the whole of the evidence that they could have adduced at the trial had, on account of some misunderstanding, not been received with respect to Hall's patent, which they said was still used, as they could have proved.

Sir F. Pollock said, all he required was that the case should state that Hall's patent was not used after 1817. If that fact were stated, he would take the rest of the case upon the defendant's own statement.

Mr. Pemberton.—Nothing could be stated in the case but what was either admitted or proved.

The Master of the Rolls.—The case as it was then settled by the Master, could not stand for the opinion of

Marshall

the Court, whether the plaintiff's patent was void in law. All facts proper and necessary to bring the matter before the Court, should be stated. The statements in the endorsement on the *postea* were proved, but there might also be other facts. It was very material for one party to state that Hall's patent was utterly useless, and it was equally material for the other party to show that it was sometimes used at present. The defendant said that the reception of his evidence was interrupted, and was not at all brought forward.

Mr. Pemberton proposed that the matter should be adjourned for a week, and that a new state of facts might be in the meantime framed, or else that there might be a new trial.

Sir F. Pollock said, it was better to have the exceptions allowed, otherwise the patent would run out before the cause was decided. The defendant was one of the greatest manufacturers in England, but the expense was of consequence to his client.

After some communication between the Counsel, the exceptions were allowed, and it was referred to the Master to settle the case, with directions to confine it to the finding of the jury and the endorsement on the *postea*, and the endorsement was ultimately as follows:—

"That before the granting of the patent, flax, hemp, and other fibrous substances, were spun with machines with slides by which the *reach* was varied according to the length of staple or fibre of the article to be spun, and that that has been a fundamental principle of dry spinning known and used before the granting of the patent; the *reach* having varied in cotton spinning between seven-eighths of an inch to one and a-half inches—in flax or line spinning from fourteen to thirty-six inches, in tow spinning from four to nine inches, in worsted spinning from five to fourteen inches. But before the granting of the patent it was not known that flax could be spun by means of maceration as having a short fibre at a *reach* of two and a-half inches or about those limits. But before that time *Horace Hall* had taken out a patent, &c., with a specification annexed; and the machines manufactured according to that patent were constructed with the *reach* of four and three-quarter inches."

Kay v.

The case was then argued in the Court of Common Pleas, on the 8th May, 1839, before *The Lord Chief Justice* (*Tindal*) *Mr. Justice Vaughan*, *Mr. Justice Bosanquet*, and *Mr. Justice Erskine*, by *Sir F. Pollock*, for the plaintiff, and *Sir W. W. Follett*, for the defendant, and *Lord Chief Justice Tindal* gave judgment as follows:—

In this case, which has been sent to this Court by his Honour the Master of the Rolls, the question as to the validity of the patent has been argued before us upon various grounds of objection; and consequently, a certificate in the general terms of the question, that the patent does not appear to us to be valid in point of law, could not give satisfaction to the Court from which the question was sent.

We therefore proceed shortly to state the ground upon which our opinion is formed, that the patent in question is not valid in point of law.

The patent is taken out for 'new and improved machinery for preparing and spinning flax, hemp, and other fibrous substances by power,' and the invention is declared in the specification to consist of 'new machinery for macerating flax, and other similar fibrous substances, previous to drawing and spinning it, which is called the preparing it, and also for improved machinery for spinning the same after having been so prepared.'

Now, although the first part of the invention described in the patent, viz., the new machinery for macerating, appears from the facts stated in the case to be a proper subject for a patent, both with regard to the invention thereof being original, and in all other respects, yet the latter part of the patent, viz., the improved machinery for spinning flax, &c., does not, upon the facts stated in the case, and the description of the invention contained in the specification, appear to us to be a subject upon which a patent can by law be taken out.

The patentee, in describing the improved machinery for spinning, which constitutes one part of his patent, informs the public 'that he places the drawing rollers only two and a-half inches from the retaining rollers, and that this constitutes the principal improvement in the said spinning machinery,' and he then proceeds to assign the reason and principle upon which the alleged improvement

Marshall

rests; and in a latter part of his specification, (when stating the extent of what he claims as his own invention in respect of improved machinery for spinning flax) he describes it to be the wooden or other trough for holding the roving when taken from the macerating vessels, and 'the placing of the retaining rollers nearer to each other than they have ever before been placed, say within two and a-half inches of each other, for the purpose aforesaid.' So that looking at the whole of the specification, it is not the use of the wooden or other trough, as used by him, upon which he relies, as indeed it obviously could not be, as an important invention, nor as the proper subject for a patent; but it is 'the placing and retaining of the respective rollers within two and a-half inches from each other,' that forms the real subject matter of the patent for the improved machinery.

Now, whether a patent can by law be taken out for placing the retaining rollers and the drawing rollers of a spinning machine (which machine itself was known and in use before) within two inches and a half of each other, under the circumstances stated in the case, is the real question between the parties, and we think it cannot.

The placing rollers at an assigned distance apart in a machine in which they had already been placed at variable distance, no subject-matter for a patent

For it appears from the endorsement upon the *postea*, that before the granting of this patent, flax and other fibrous substances were spun with machines by which the *reach* was varied according to the staple or fibre of the article to be spun, and that that had been a fundamental principle of *dry* spinning known and used before the granting of this patent; and further, that the *reach* used in cotton spinning had been less than two inches and a half. The application, therefore, of a *reach* of two inches and a-half to the spinning of flax when in a state of maceration, by which the fibre of flax will not hold together beyond two inches and a-half, does not appear to us to be any new invention or discovery, but is merely the application of a piece of machinery already known and in use to the new macerated state of the flax. The fundamental principle in dry spinning was, that the *reach* varied according to the length of the staple or fibre of the article to be spun; and spinning machines were in use, either with the reaches fixed or connected with slides, so that their distance might be varied according to the length of the fibre of the article intended to be spun; and,

Kay v.

The case was then argued in the Court of Common Pleas, on the 8th May, 1839, before *The Lord Chief Justice* (*Tindal*) *Mr. Justice Vaughan*, *Mr. Justice Bosanquet*, and *Mr. Justice Erskine*, by *Sir F. Pollock*, for the plaintiff, and *Sir W. W. Follett*, for the defendant, and *Lord Chief Justice Tindal* gave judgment as follows:—

In this case, which has been sent to this Court by his Honour the Master of the Rolls, the question as to the validity of the patent has been argued before us upon various grounds of objection; and consequently, a certificate in the general terms of the question, that the patent does not appear to us to be valid in point of law, could not give satisfaction to the Court from which the question was sent.

We therefore proceed shortly to state the ground upon which our opinion is formed, that the patent in question is not valid in point of law.

The patent is taken out for 'new and improved machinery for preparing and spinning flax, hemp, and other fibrous substances by power,' and the invention is declared in the specification to consist of 'new machinery for macerating flax, and other similar fibrous substances, previous to drawing and spinning it, which is called the preparing it, and also for improved machinery for spinning the same after having been so prepared.'

Now, although the first part of the invention described in the patent, viz., the new machinery for macerating, appears from the facts stated in the case to be a proper subject for a patent, both with regard to the invention thereof being original, and in all other respects, yet the latter part of the patent, viz., the improved machinery for spinning flax, &c., does not, upon the facts stated in the case, and the description of the invention contained in the specification, appear to us to be a subject upon which a patent can by law be taken out.

The patentee, in describing the improved machinery for spinning, which constitutes one part of his patent, informs the public 'that he places the drawing rollers only two and a-half inches from the retaining rollers, and that this constitutes the principal improvement in the said spinning machinery,' and he then proceeds to assign the reason and principle upon which the alleged improvement

Marshall

rests; and in a latter part of his specification, (when stating the extent of what he claims as his own invention in respect of improved machinery for spinning flax) he describes it to be the wooden or other trough for holding the roving when taken from the macerating vessels, and 'the placing of the retaining rollers nearer to each other than they have ever before been placed, say within two and a-half inches of each other, for the purpose aforesaid.' So that looking at the whole of the specification, it is not the use of the wooden or other trough, as used by him, upon which he relies, as indeed it obviously could not be, as an important invention, nor as the proper subject for a patent; but it is 'the placing and retaining of the respective rollers within two and a-half inches from each other,' that forms the real subject matter of the patent for the improved machinery.

Now, whether a patent can by law be taken out for placing the retaining rollers and the drawing rollers of a spinning machine (which machine itself was known and in use before) within two inches and a half of each other, under the circumstances stated in the case, is the real question between the parties, and we think it cannot.

The placing rollers at an assigned distance apply'd in a machine in which they had already been placed at variable distances, no subject-matter for a patent

For it appears from the endorsement upon the *postea*, that before the granting of this patent, flax and other fibrous substances were spun with machines by which the *reach* was varied according to the staple or fibre of the article to be spun, and that that had been a fundamental principle of *dry* spinning known and used before the granting of this patent; and further, that the *reach* used in cotton spinning had been less than two inches and a half. The application, therefore, of a *reach* of two inches and a-half to the spinning of flax when in a state of maceration, by which the fibre of flax will not hold together beyond two inches and a-half, does not appear to us to be any new invention or discovery, but is merely the application of a piece of machinery already known and in use to the new macerated state of the flax. The fundamental principle in dry spinning was, that the *reach* varied according to the length of the staple or fibre of the article to be spun; and spinning machines were in use, either with the reaches fixed or connected with slides, so that their distance might be varied according to the length of the fibre of the article intended to be spun; and,

Kay v.

consequently, there is nothing new in applying the use of a spinning machine with the *reach* of such a degree of shortness as would suit the continuity of the roving of the flax after it is macerated.

It is to be remarked, that the application of moisture in spinning flax, for the purpose of separating the fibres and reducing the length of the staple, was not new in practice, and had been resorted to under Hall's Patent, though in a different manner from that employed upon this occasion. Now, suppose a patent to have been first obtained for some entirely new method, either chemical or mechanical, of reducing the fibres of flax to a short staple, we think that a second patent could not be taken out for an improved mode of machinery in spinning flax, which consisted of nothing more than the spinning of the short staple of flax by a spinning machine, with a *reach* of a given length not less than that already in use for the spinning of cotton, the effect of which would be to prevent the first patentee from working his invention with the old machine at the proper *reach*. And if a patent taken out for that object separately would be invalid, so also a patent taken out for an invention consisting of two distinct parts, one of which is that precise object, would be void also.

A simple variation in a method previously patented would not give a subsequent patentee the right of including the method itself in his claim.

The answer given to this objection on the part of the plaintiff has been, that the invention for which the patent has been taken out, does not consist of two distinct parts, but has but one entire single object only; namely, the object of macerating and spinning that macerated flax, on a machine where the rollers are retained at the prescribed distance from each other. But this appears to be at variance with the specification itself, which divides the invention and the subject matter of the patent into two distinct parts; and even if it is to be considered as one entire invention, if part of what is claimed is not properly the subject of patent, or not new, the whole must be void. We shall therefore certify to his Honour that in our judgment the patent in question is not valid in law.

Marshall

KAY *v.* MARSHALL.

In the Court of Chancery before the Master of the Rolls (Lord Langdale).—Trinity Term, 1839.

THIS case again came on for argument on the certificate of the Court of Common Pleas, and judgment was given by *Lord Langdale,* as follows:—

This case came before me on the equity reserved upon the certificate returned by the Judges of the Common Pleas, to whose consideration a case was submitted, with the question whether the plaintiff's patent was valid in point of law. The Judges have certified their opinion to be, that the patent is not valid in point of law, and the defendants thereupon insist that the plaintiff's bill ought to be dismissed with costs; and that the plaintiff ought also to pay the costs of the issue and of the case.

The plaintiff contends that the opinion of the Judges is erroneous, and that I ought either to give relief, notwithstanding their certificate, or to put the question relating to the validity of the patent into some further course of inquiry.

The question with me is the same as that which was before the Judges, and though I have the aid of their opinion, and, by their favour of the reasons which induced them to form that opinion, it is undoubtedly my duty to consider whether, after hearing the reasons which have been advanced on both sides, it is an opinion satisfactory to my own mind, and such as I ought to adopt. The decision to be pronounced here must rest on my responsibility, and not on the responsibility of the Learned Judges whose assistance I have asked and received.

The patent was granted for "new and improved machinery, for preparing and spinning flax, hemp, and other fibrous substances by power." And in the specification, the plaintiff declared the nature of his invention to consist in "new machinery for macerating flax and other similar fibrous substances previous to drawing and spinning it; and also in improved machinery for spinning the same, after having been so prepared."

Nothing has occurred to shew that the plaintiff's machinery for macerating flax previously to drawing and

Kay

Part of a combination (the subject matter of a patent) being old & [illegible] will not invalidate the patent.

spinning, was not new at the time when the patent was granted; and nothing has occurred to shew that previously to the grant, it was known that maceration to the extent proposed by the plaintiff was not a new process by which flax was usefully prepared for drawing and spinning it; and so far as relates to the maceration described in the patent, no mention is made as to the novelty and utility of the plaintiff's invention; and, if this were all, the validity of the patent would not be affected by the fact, that before the grant, a mode of preparing the flax for spinning by moistening it, had been invented by *Horace Hall*, or, that subsequently to the grant, a more convenient and efficient mode of maceration had been invented and come into general use. But, with respect to improved machinery for spinning, the plaintiff in his specification says, "I place the drawing rollers only two and a-half inches from the retaining rollers, and this constitutes the principal improvement in the said spinning machinery; for the roving being so completely macerated, would not hold together to be drawn out, while in such a state, to the ordinary length of the staple; but this very state when drawn in so short a length as here represented, enables it to be spun very fine, and evenly; for it should be stated, that there is no elasticity in the fibre of flax, hemp, nettle-weed, or other the like substances; but when drawn by rollers so placed as aforesaid, and moving at the relative speeds aforesaid," which he has previously described to be eight to one, "and in the completely saturated state aforesaid, the fibres themselves are pulled asunder and require to be twisted immediately, or the continuity of the thread would be destroyed." And, again, in specifying his claim, he declares, that that which he claims as his invention in respect of improved machinery for spinning flax, hemp, and other fibrous substances, is a certain trough which he has described, and the placing the drawing and retaining rollers nearer to each other than they have before been placed, say within two and a-half inches of each other, for the purpose aforesaid.

From this specification, it appears to have been known to the plaintiff, that the fibres which were to be spun after maceration, would be pulled asunder by drawing in his manner, and require to be twisted immediately to prevent the continuity of the thread being destroyed; and there-

Marshall.

fore, he placed the drawing and retaining rollers very near to each other.

He has declared, that this placing of the rollers constitutes the principal improvement in the spinning machinery; and, amongst the things which he claims as his invention, is this placing of the rollers nearer to each other, "nearer than they have been placed, say within two and a-half inches, for the purpose aforesaid." And it is endorsed on the *postea* by the Learned Judge before whom the issue was tried, that "before the granting of the patent, it was not known that flax could be spun by means of maceration, as having a short fibre, at a *reach* of two and a-half inches." But in various sorts of spinning machines which were used before the granting of the patent, there were slides, by which the *reach* was varied according to the length of the staple or fibre; "for cotton spinning, the *reach* varied from seven-eighths to an inch and a quarter; for tow spinning, from four to nine inches; for worsted spinning, from five to fourteen inches;" for flax or line spinning, from fourteen to thirty-six inches, so that machinery, by which the *reach* was varied from less than an inch to thirty-six inches, was known before the granting of the patent.

The claim for the combination in the case of maceration wit the short reach might have been good.

The plaintiff has found, that a *reach* of two and a-half inches or thereabouts, is well adapted for spinning flax prepared for spinning by his process of maceration; and the question is reduced to this—whether his adopting that particular length of *reach* for the purpose of applying it to the spinning of flax so prepared, is to be considered an improved machinery in respect of which this patent can be held to be valid, and I am of opinion, that it cannot.

I concur entirely with the Learned Judges, and see no reason to think that any other result would follow from further investigation.

Being of opinion that the patent is invalid, it follows, that the bill must be dismissed. I have considered the question of costs, and I think that I ought to make no order with respect to the costs of the issue; but the plaintiff must pay the costs of this suit and of the case.

In re Kay's patent

IN-RE KAY'S PATENT.

In the Privy Council, before Lord Lyndhurst, Lord Brougham, Sir H. Jenner, and Dr. Lushington.—June 13, 1839.

This was an application to the Crown to extend the period for which the letters patent were originally granted, and the case came on to be heard before the Master of the Rolls had given judgment in the case of *Kay* v. *Marshall.* The whole of the proceedings at Law and in Equity were stated to their Lordships, and they expressed themselves in some difficulty whether to proceed before the judgment of the Court of Chancery was obtained, but as the patent would very shortly expire they decided to proceed.

The Attorney-General (*Campbell*) who appeared for the Crown, said if this were *res judicata*, and the Court had decided this not to be a valid patent, he should strenuously resist a prolongation of the term, but being *lis pendens*, he did not conceive their Lordships could be considered as deciding that by recommending a prolongation of the patent.

The papers containing the advertisements and other formal evidence were then put in. Witnesses were then called to show the nature of the invention and the great benefit derived by the country from the invention.

Sir F. Pollock, for the petitioner, stated, that the great discovery in this invention, consisted in finding that flax on being macerated or well wetted would offer fibres of nearly two and a-half inches long, and that by pulling that up and spinning with rollers set at a *reach* of two and a-half inches, the highest degree of fineness might be obtained by machinery. The patent was not for maceration alone nor for putting the rollers at a *reach* of two and a-half inches, but the spinning of flax subject to those two states of circumstances was the one entire invention, and that was new, and of the greatest value to this country.

Mr. Cresswell contended against their Lordships proceeding with the hearing; the patent was unquestionably bad, the Court of Common Pleas had so decided.

Kay v Marshall.

Lord Lyndhurst.—We think, after all the consideration we can give it, we must come to the conclusion that we will not inquire into the validity of the patent, and as our decision does not affect the decision of the Court of Chancery, we will assume for this purpose that it is a valid patent, and then the only question will be whether this gentleman is entitled to a renewal. See the inconvenience of any other course; suppose we were to lay down the principle and come to a decision that we will not extend the patent on the ground that it is an invalid patent, and a few days hence the Master of the Rolls should decide that it is a valid patent, we should do a great wrong, while on the other hand if we assume the patent to be valid we do no harm.

It was shown that 8,172*l.* had been received by the petitioner, from which was to be deducted 3,700*l.* for law expenses and the costs of the patents; and that if Mr. Kay succeeded, he would probably recover 2,000*l.* of the costs from the defendants.

Their Lordships decided on recommending the Crown to extend the patent three years.

KAY *v.* MARSHALL.

In the House of Lords.—June 10, 14, 15, *and* 18, 1841.

This was an appeal on behalf of Mr. Kay, from two orders of the Master of the Rolls, made respectively on the 31st January, 1837, and the 16th July, 1839.

In this case, the Master of the Rolls, on the 31st of January, 1837, with the consent of both parties, directed a case for the opinion of the Court of Common Pleas, which being heard by that Court, their Lordships certified that they were of opinion that the patent was not valid in point of law, giving reasons for that opinion; and on the 16th July, 1839, the Master of the Rolls being of opinion that the patent was invalid, ordered the bill to stand dismissed with costs at Law and in Equity, except the costs of the issues tried at York.

Kay

Sir Frederick Pollock and *Mr. Kindersley*, appeared for the patentee (Mr. Kay), and *Mr. Pemberton* and *Sir W. Follett*, for the defendant.

It was urged that the pleas having been falsified by the finding of the jury, that the patent must therefore be good at law. Every kind of defence had been tried, first by demurrer, which failed; then by plea and answer, in which there was no better success; and lastly, by trial at law, in which the verdict of the jury was, that the invention was new and useful, and therefore the patent was established. That the verdict having negatived the pleas, the facts ought to be held conclusive against the defendant, and the Master of the Rolls ought to have given judgment for the plaintiff, instead of ordering a case for a Court of law, and the questions as construed by that Court were irregular, and varied the decree made on the original hearing. The opinion of the Court of Common Pleas did not apply to the letters patent or any defect on the face of them, but to the form of the specification; a point which was not raised by the pleadings. The only questions raised by the pleas were as to the novelty and utility of the invention. The finding of the jury was not invalidated by the endorsement on the *postea*. The endorsement is part of the finding, both together showed that there was no good defence. Some parts of the machinery described was not new nor stated to be new. The patent law protects every new combination or variation of machinery. The Court did not deny that the patentee had invented that which might be secured by a patent, but that he had claimed what was not new. The opinion come to by the Court of Law could not be appealed against, but the order of the Master of the Rolls acting on that opinion, was what was appealed against.

For the respondents it was contended that that which was claimed in the specification in respect to machinery, was not new. The placing of the rollers at two and a-half inches *reach* was not new, they had been placed nearer in cotton spinning and at all times in accordance with the length of the fibre to be spun. The patentee claimed for the machinery which was not new. The patent was for fibrous substances generally. If he had discovered that macerating flax and spinning it at a *reach* of two and a-half inches was new, he should have so claimed the inven-

Marshall.

tion; as it was, the spinning of wet flax was not separately new, neither was the making of spinning machinery with a *reach* of two and a-half inches new, therefore the patent as specified must be bad in law.

The Lord Chancellor.—In this case the plaintiff complains of the defendant having infringed his patent, and of the course which has been taken below; one, certainly not of very ordinary occurrence, as your Lordships will see when I call your attention to the mode in which the case was disposed of in the course of the proceedings. The bill sets forth the letters patent and specification, and states that the invention was in respect of machinery for preparing and spinning flax, hemp, and other fibrous substances. It states the specification, and then states that the first process, namely, that of macerating the flax, had to a considerable degree become unnecessary. It then complains of what the defendants had done, not as interfering with the plaintiff's patent as regards the preparing of the flax for spinning, but as having invaded his patent so far as it was an improved machinery for drawing and spinning flax, which machinery for drawing and spinning flax is stated to have been in use, and very generally adopted. That is the complaint made by the bill, to which the defendant pleaded, and by his pleas thus raised two objections to the plaintiff's title. The first objection was, "That the plaintiff had not before, and at the time of the making of the letters patent in the bill mentioned found out and invented any new and improved machinery, as in the said bill of complaint and in the said letters patent and specification is alleged." That objection therefore was, that the patent was bad, because the invention described in the letters patent and specification was not new, that there was not any novelty in it, alluding to the rule of law, that if any part of that which is claimed as a new invention was not in fact new, the patent would be bad. First of all, upon the construction of this plea. I cannot entertain a doubt that the terms "any new and improved machinery, as in the said bill of complaint and the said letters patent and specification is alleged," are to be construed as meaning any such machinery as is there alleged, and in respect of which the patent is claimed, but I apprehend that that does not now come before your Lordships for decision.

Kay v.

The two pleas having been set down for argument an issue was directed, which was afterwards tried. No judgment was pronounced on the validity of the pleas, the parties having, although it is not expressed in terms in the order, thought it expedient to proceed to the trial of the truth of the pleas, not obtaining or asking the judgment of the Court as to the legality of the pleas, and as to how far they raised the important fact; they proceeded to a trial accordingly, and on the trial the jury found in favour of the novelty and of the usefulness of the invention, but there was this endorsement on the *postea.*[*] [His Lordship read the endorsement.] Now that endorsement which is to be taken as part of the information which the Court was to act upon as ascertained before the jury, states the various distances at which the rollers were placed in the ordinary spinning machines, and states as a fact which cannot now be in dispute, "that before the granting of the patent, flax, hemp, and other fibrous substances were spun with machines with slides, by which the *reach* was varied according to the length of the staple, or fibre of the article to be spun." We have it, therefore, as a fact, now to be assumed as true, that spinning machines were constructed with rollers, the distances between which varied according to the substance to be spun.

Now all the variation which the plaintiff introduced into the ordinary spinning machine, which he claims as his invention, is fixing the rollers at two and a-half inches distance from each other; and that he states is such an improvement to the ordinary spinning machine as entitles him to be protected from all the rest of the world, against their using spinning machines with the rollers at that distance. It is not, as was argued at the bar, one invention, namely, the macerating the flax and using the flax so macerated, with a particular machine. The earlier part of the invention he not only does not claim as against the defendant, but does not complain of the defendant as having used that, which, in point of fact, it is quite clear, they did not so use, and in point of fact, it is quite clear that he has not adopted that mode. Another mode has been adopted of macerating the flax, and the flax so macerated by another process has been

---

[*] *Ante* page 161.

Marshall.

used in a machine with rollers at a distance of two and a-half inches.

If the patent be good so far as the spinning machine is concerned, that is to say, if the plaintiff has a right to tell the defendants and all the rest of the world that they shall not use the common spinning machine with rollers at two and a-half inches distance, then the existence of the patent deprives the defendant and all the rest of the world of the right of using the ordinary spinning machine in the form in which they had a right to use it before the patent was granted. That is not the object of the patent; if he has discovered any means of using the spinning machine which the world had not known before, the benefit of that he has a right to secure to himself by means of a patent. But if this mode of using the spinning machine was known before, and the endorsement upon the *postea* states that it was known before, then the plaintiff cannot deprive them of having the benefit of that which they enjoyed before. The endorsement on the *postea*, stating that the rollers had been used at a variety of distances, not precisely specifying two and a-half inches, but stating that the distances had been made to vary according to the length of the fibre to be spun, appears to me to establish a fact which is of itself conclusive against the plaintiff. Some question was raised at the bar as to whether the effect of the maceration was to shorten the fibre. There is no very distinct evidence on the subject, but upon referring to what has taken place in the Court below, it does not appear that any doubt existed that the effect of the maceration was to detach one fibre from another, the substance consisting of a variety of fibres of the length of two and a-half inches each, which, when combined, constituted a compound fibre of considerable length, but when detached by means of maceration by the application of moisture, then each individual fibre was reduced to the length of two and a-half inches. It does not appear to me, however, that this case can depend upon this circumstance, because the real use of the spinning machine, before that process of maceration was introduced, was this. A machine for spinning with rollers at any distance at the option of the party using it, or according to the substance to be spun,—and any substance might be spun, that was capable of being

Public not to be deprived of that which the have possessed.

Kay a

so spun, with rollers at two and a-half inches distance, because the fibre was of that length, or for any other reason,—that it is quite immaterial. The question is, whether it is an innovation, the placing the rollers at two and a-half inches distance from each other; but by the indorsement on the *postea* we are told that the distance between the rollers varied according to the length of the fibre of the substance to be spun. Under these circumstances, the case now being reduced simply to the question, whether the construction proposed by the patent is an improvement of the spinning machine, it appears to me that the judgment of the Court of Common Pleas is well founded, confined as it is now to that point, and that such a patent is not valid in point of law. Some objection was made to the course which was adopted in sending the case, that is to say, to the terms in which the case was sent. It appears there is no question that the parties below were willing to adopt the terms proposed, in order to put an end to the litigation, and that the Court therefore sent a case embracing the right of the parties, namely, the validity of the patent confined to the particular point raised. That of itself would be an answer to the objection now made to the form in which the case was sent, because this House will not permit parties upon appeal to raise an objection which they did not think proper to raise before, and on which they did not obtain the judgment of the Court below.

But even independently of that consideration, although the terms of the question for the Court of Common Pleas are as to the validity of the patent, you must take the whole case together; you have the facts stated which raise the objections to the validity of the patent, which are contained in the pleas; and these facts are confined to the question of novelty and to the question of usefulness. In point of fact, therefore, although the terms in which the question is couched are larger than the plea, it is the very same question which was raised before his Lordship the Master of the Rolls. And that was the question on which the judgment of the Court of Common Pleas was pronounced. It does nothing more than establish this proposition, that the objection taken to the patent, namely, that it was not new, and not useful (novelty is the question rather on which it turns), is a

Marshall.

good objection, and that the patentee has failed to show that that for which alone he has claimed the patent is any novelty, and entitles him to the benefit of the patent.

Lord Brougham concurred.

Ordered that the appeal be dismissed with costs, and that the orders and proceedings complained of be affirmed.*

---

* Mr. Kay introduced into the manufacture of flax and hemp the most important invention, and produced the greatest change in that manufacture which has been realized since hemp and flax have been spun, and yet for want of proper advice in preparing the title of his patent and the specification of his invention, he failed to reap those advantages which he was so justly entitled to. All parties are agreed, and it was admitted by the defendant's counsel at the trial, that to Mr. Kay this country is indebted for that manufacture which consists of *using wet flax in spinning machinery, combined with the placing of the rollers at two and a-half inches apart.* At the date of Mr. Kay's patent it was not new, neither was it useful to spin from wet flax generally, but only when combined with the use of rollers set at two and a-half inches apart. Mr. Hall had in his patent (taken before Mr. Kay's) described the use of wet flax combined with four to five inches *reach*, or *ratch*, which necessarily failed. Then with respect to the use of rollers set at two and a-half inches apart, that of itself was not useful in spinning flax, or any other fibre, and that arrangement of spinning machinery was and is only useful when combined with wet flax and hemp. Mr. Kay was therefore only an inventor of the combined process, and not of the two separate parts. It is suggested, that his patent should have been taken for a very different title, and the specification should have been very different to that which was enrolled. If the title of the patent had been for *improvements in spinning flax and hemp*, and had the specification, after fully describing a process of wetting the flax and machinery for spinning with rollers at two and a-half inches apart, gone on to state that no claim was made to the employment of wet flax and hemp separately; and further, that no claim was made for placing rollers of spinning machinery at a distance of two and a-half inches apart, when separately considered, and that the only *claim to invention was the spinning of flax and hemp by combining the process of wetting with the use of spinning machinery, having the rollers set at a distance of two and a-half inches apart*, there is no reason to doubt that the patent would have been sustained, and that Mr. Kay would have been rewarded for his highly meritorious invention. The case of *Kay* v. *Marshall* should be well studied by all future inventors and patentees, in order that they may not, like Mr. Kay, be deprived of the benefit which they may be entitled to.—W.C.

Lovell

LOVELL *v.* HICKS AND OTHERS.

In the Court of Exchequer in Equity.—Before Mr. Baron Alderson.

The hearing of this cause was in February, but judgment was not given until the 20th June, 1836.

In this case, Mr. Hicks, one of the defendants, had obtained letters patent for "an economical apparatus or machine to be applied in the process of baking for the purpose of saving materials," sealed at Westminster the 26th June, 1830. The invention consisted of so constructing an oven that the vapours passing off when baking bread were condensed in the ordinary manner of distilling spirits, it being stated that bread when being baked was in such a state of fermentation as to give off spirit, and the patentee claimed "an economical apparatus or machine to be applied to baking, consisting of a combination of an oven for baking fermented dough into bread with a conducting pipe leading to a refrigerator or condensor for the purpose of saving and collecting the liquid materials which are evolved from dough during the process of baking, whatever may be the kind of metal or substance of which the oven is made."* The defendant, Mr. Hicks, entered into an agreement with the plaintiff for the sale of a license for a certain district of England under his patent, and the plaintiff had paid Mr. Hicks 3,000*l.* under this agreement. The invention failed to produce the results stated, and the plaintiff filed a bill on the equity side of the Court of Exchequer to have the agreement cancelled and to recover back the money paid. The bill stated that the defendants had caused bread to be baked before the plaintiff and others by which there was produced spirit, and this induced the plaintiff to enter into the agreement, and the bill charged the defendants with having fraudulently introduced spirit into the bread, by which the invention apparently succeeded, and the plaintiff had thereby been misled.

Mr. Knight and *Mr. Blunt* appeared for the plaintiff, and *Mr. Wigram* and *Mr. Heathfield* for the defendants.

Mr. Baron Alderson, at the hearing of the cause, said that it was incumbent on the plaintiff to show active fraud with a view to misrepresent; and his Lordship gave judgment, as follows:—

---

* The question raised in no way turning on the construction of the specification, it is not thought desirable to introduce it.

Hicks et al.

This was a bill filed by the plaintiff, Edward Bourne Lovell, against the defendants, Robert Hicks, Octavius Henry Smith, Ralph Watson, and William Todd, praying that the agreement made on the 3d of March, 1832, may be set aside, on the ground of misrepresentation and fraud, and may be delivered up to be cancelled, and that the defendants may be directed to repay to the plaintiff the sum of 3,000*l.* received by them, with interest, and may be restrained by injunction from bringing any action to recover the remainder of the money, 2,000*l.*, due under the agreement. The question has been very fully and satisfactorily discussed by the Learned Counsel on both sides, who have most ably assisted the Court in coming to a conclusion, by laying successively before it all that could properly be urged on behalf of their respective clients, and the Court is much indebted to them for that assistance.

The question resolves itself into this: whether the plaintiff can make out in fact such a misrepresentation and such a fraud as entitle him, after the acquiescence, for some time at least on his part, to come to a Court of Equity to rescind his contract; and if so, then against whom, and to what extent is he entitled to relief? I do not think that there is any very material difficulty in the principles by which my decision must be governed. They are laid down by *Lord Lyndhurst* in his very able judgment in the case of *Small* v. *Attwood*, and I believe are such as cannot be doubted or impugned. Although that decision is now undergoing review in the House of Lords, I do not conceive that this part of it is or can be shaken. If the contract be founded on fraudulent misrepresentations, such as would in a Court of Law be sufficient to support an action on the case, it may in a Court of Equity be rescinded. Now, the fraud may consist in the misrepresentation of a fact material to the contract, where the truth of that is known to the one party and unknown to the other; and the misrepresentation is intentionally made with a view of procuring a more advantageous contract than the real facts, if truly stated, would have warranted. This is the nature of the case on which the plaintiff relies; and I do not doubt that if this be made out to my satisfaction, the plaintiff ought to be relieved, unless indeed he has, after full knowledge of the truth, persisted in the contract previously made.

Starting, therefore, from these principles, I proceed to

Lovell a

examine the facts in this case which appear in evidence; and although I am not insensible of the disadvantage which a Court of Equity labours under in not having the benefit of oral examination, which I own I have long thought might with great advantage be given to it, to be exercised by it at its discretion, and applied to such parts of a case only as might be found, after discussion, to require it; yet, when I compare the counterbalancing advantage of long and calm deliberation, and of dispassionate inquiry which a Judge possesses who can at leisure weigh all the circumstances, with the sudden and hasty decision of a jury at *nisi prius*, even though assisted by oral examination, I have no doubt that, upon the whole, in nice and complicated questions such as this, I should not do real justice to the parties by directing an issue.

It appears that on the 26th of June, 1830, a patent was taken out, and that on or about the 26th of December, 1830, a specification was filed of the nature and mode of carrying into effect the invention for which the patent had been previously obtained.

The claim in the patent was for an invention of an economical apparatus or machine to be applied in the process of baking, for the purpose of saving materials; and in the specification it is stated, that "such apparatus bakes the bread and collects a certain spirituous vapour, which is always disengaged from fermented dough during the process of baking the same into bread, and which vapour is usually dissipated and lost; but by the refrigeratory or condensing part of the economical apparatus or machine the said vapour is condensed into liquid materials, containing spirit or alcohol, and from which materials useful spirituous liquors may be drawn by the processes usually practised for the rectification of raw spirits." In another part of the specification it is distinctly stated, that the flour having been previously converted into dough, and duly fermented, and then made up into loaves according to the usual method, the loaves are introduced into the oven, &c. And again, at a subsequent part of the specification, the following statement occurs:—"The liquid materials thus saved by my economical apparatus or machine during the process of baking fermented bread into dough, is a diluted spirit, from which a useful spirit may afterwards be extracted by the usual process of rectification. The alcohol, which constitutes the value of

Hicks et al.

the materials saved by my economical apparatus or machine, is produced in the process of fermentation which the flour or dough has undergone in the manner usually practised for preparing dough for bread. That alcohol has been hitherto dissipated in vapour and totally lost; but my aforesaid economical apparatus or machine, being applied in the process of baking such dough into bread, the said alcohol is saved and collected; and although it is intermixed with water and other liquid matters which are evaporated from the dough at the same time, the liquids, so saved, are useful materials for the rectifiers of spirits to extract fine spirit from." I have referred more particularly to these parts of the specification, in order to show the grounds on which I have clearly arrived at the conclusion, that this invention purported to be one for obtaining spirit by means of a patent apparatus for baking bread of the ordinary description, fermented in the ordinary method. I can feel no doubt on this subject.

In March, 1832, after a negotiation, to which I shall advert, the agreement in question was executed, under which 3,000*l.* was subsequently paid. By that agreement Robert Hicks, the original patentee, together with Mr. Smith, Mr. Watson, and Mr. Todd, who had intermediately obtained an interest with Hicks under an assignment of it, granted their license to the present plaintiff, Mr. Lovell, to exercise the patent within the town of Birmingham, and a limited circle round it, in consideration of 1,000*l.* then paid, and of the further sum of 4,000*l.* to be paid by certain instalments. Now, the plaintiff says, he was induced to make this agreement by certain fraudulent misrepresentations made by Robert Hicks.

In June, 1831, it appears that a letter was inserted in the "Staffordshire Advertiser," signed by a miller of the name of Pratt, in which a very favourable account was given of the new invention. This letter, it is said, was corrected as to some of its details by Mr. Hicks; and in particular it is stated, that the representation that three bushels of flour would produce eighteen pints of liquor, containing twenty per cent. of alcohol, was expressly made by Hicks, he having altered Pratt's original draft of the letter from eighteen per cent. to twenty per cent. in his own handwriting. This fact depends on the testimony of several witnesses. On the other hand, there is

Lovell

the distinct denial of these circumstances by Hicks in his answer; and very powerful observations have been made on the probabilities of the case, and on the credibility, as to this part of it, of the plaintiff's witnesses. And it is contended with great force, that it is quite obvious that the expression "alcohol" in the statement, if made, was clearly in the course of the negotiation understood by all parties to mean proof spirit, and not alcohol in the strict chemical use of this word; and to this latter part of the defendants' argument I fully accede, but the weight of evidence appears to me to be in favour of the plaintiff as to the representation.

The next fact adduced by the plaintiff relates to a meeting at an inn in Birmingham, at which he was present. There a sort of experimental baking took place, and similar representations were made by Hicks, which seem fairly enough proved. Then come two meetings at Bilston, between the plaintiff and Hicks, at both of which similar representations were made, and Pratt's letter was read by the plaintiff. Then follows the journey to Chelsea, at which the apparatus belonging to the defendants was shown to the plaintiff, and he had an opportunity of examining the results, and a portion of the spirits thereby produced was delivered over for him to inspect and examine.

All these circumstances which I have cursorily gone through took place before the agreement in question; and it is not unfair to conclude, that these were in truth the circumstances which induced the plaintiff to enter into that agreement. What, then, are these circumstances? They appear to me to amount to this:—here is a clear statement by Hicks that he was in possession of an apparatus for baking ordinary bread, whereby the spirit therefrom produced would be saved. Here is a statement also of eighteen pints, at twenty per cent. of alcohol, produced by three bushels of flour; or, if I state the defendants' case most favourably, at all events to a highly advantageous amount. And there is also a performance of experiments in the plaintiff's presence, first at Birmingham, and afterwards at Chelsea, by which he is induced to believe that such representations are in substance true.

Then, if so, are the other facts such as to satisfy me that this was not a true statement, and that Hicks knew all the time that it was false? That is the conclusion at

Hicks et al.

which, after much consideration, I have been obliged to arrive. In the first place, I think that it is proved on the part of the plaintiff that the bread baked was not substantially bread of the ordinary description. There may be, no doubt, though that is not very satisfactorily made out, great differences of practice in preparing bread, as to the ferment used; but there is no balance of testimony as to the point that the particular ferment used by Hicks varies from all those hitherto in use most materially, and precisely in those respects which would produce a favourable result in those experiments which might be made to show off the new process. Nor do I think that any doubt can reasonably be entertained on the evidence before me, that ordinary bread baked according to the patent process will produce no advantageous results to the parties.

If these facts were known to Mr. Hicks, every experiment becomes of itself a fraudulent misrepresentation. Now, the circumstances satisfy me that Mr. Hicks must have known this. I cannot well account, except on this supposition, for the peculiar care and watchfulness over the ferment which was secretly prepared by him when used, and for the peculiar secrecy which, according to the plaintiff's evidence, was observed at the time of the experiments made in the presence of the committee at Bilston. Indeed, when I observe the great secrecy as to the ferment, compared with the ostentatious openness as to the other parts of the process, I think it shows plainly enough that Mr. Hicks must have been conscious that in this respect he was practising a deception on the plaintiff and the other persons. All the testimony, with the exception of that of one witness, seems to me uniform as to this; and I am by no means satisfied as to the testimony of that witness.

I do not think it necessary to refer to the circumstances of the addition of the spirits to the liquor produced from one experimental baking. There is some contradictory evidence as to the fact. If it were entirely true, this would be an act of very gross fraud on the part of Mr. Hicks. The witness for the defendants, who speaks to this point, does not deny very improper conduct, but only exculpates Hicks from having personally participated in it. The whole transaction is suspicious. The other parts of the case, however, are clear. If, indeed, the

Lovell

question had depended merely on the misrepresentation as to the extent of the profits, and it had appeared that the results obtained, varying as they do as to the amount of spirit produced, were all that the plaintiff relied on to prove fraud, I should not have thought that a strong case had been made out. If the bread actually baked had really been ordinary bread, or if the attention of the purchaser had been called to the fact of its not being prepared in the ordinary way, either before or during the early experiments, even after the agreement of the 3d March, 1832, I should have been disposed to think, either that no fraud had been practised, or that at all events, even if there had been fraud, he had persisted much too long after full knowledge of the facts, to be entitled to relief. But it seems to me that from the beginning he is misled by the patent and specification; and that the defendant Hicks must have been fully aware of the delusion under which this bargain was made.

I do not rely on the mere failure to produce the quantity of spirit originally stated by the projectors. I do not think that the plaintiff acted on such representations taken literally. The experiments made, with which he expressed his satisfaction, show this I think to have been the case. But I think that throughout he, and those with whom he acted, thought, and had reason to think, from the representations made, that they were purchasing an apparatus for baking ordinary bread; that they were to compete with ordinary bakers on vantage ground, and that the quantity of spirit to be produced (which I allow must be taken to be proof spirit), was to be their means of profit. This I think was the state of facts under which the bargain was made; and if the main fact was known to Hicks not to be true, what were all the statements he made and the fallacious experiments which he himself knowingly exhibited, and knowingly permitted the other party to make and to see, but so many laborious frauds practised on his part upon the plaintiff? I am satisfied, therefore, that fraud has been made out so far as Hicks is concerned; and I do not think that after full knowledge of it the plaintiff has ever acquiesced in the bargain. I am not at all satisfied that he ever knew the ingredients of the ferment till the receipt was delivered to him on the 5th December, 1832. It is clear that he was not a baker; and the period when he first knew the extent of

Hicks et al.

the misrepresentation, would be not the time when the receipt was first given to him, but that when he first knew, or reasonably might have known, that the ferment was substantially different from those in common use. That time does not appear; and this suit was commenced in February, 1833. I think, therefore, that the plaintiff is, on the whole, entitled to relief.

But then the other defendants are not affected directly or indirectly with that fraud, and only have received their proportionate shares of the money through Hicks. As to one of them (Mr. Smith), it is further proved that he had no interest, except as a nominal party to the agreement, that he had received no part of the plaintiff's money, and that the plaintiff had full knowledge of these facts when the money was paid.

The relief, therefore, to which the plaintiff is entitled appears to me to be this: That the agreement be cancelled, and that the defendants be enjoined from pursuing any action on it against the plaintiff; that the Master should inquire how much of the 3,000*l.* has been respectively received by Hicks, Watson, and Todd; and that each of these parties should be decreed to repay what has been received by him, with interest at 4*l.* per cent.; that as against Mr. Smith, the bill be dismissed with costs; that the plaintiff should have his costs against the other three defendants, and also be repaid by them the costs he pays to Mr. Smith.

Decree accordingly.

LOVELL *v.* HICKS AND OTHERS.

In the Court of Exchequer in Equity.—February 15, 1837.

This was a petition by the plaintiff for a new hearing, in order to obtain a reversal of the judgment in this cause so far as the bill being dismissed as against the defendant Smith, and praying that the judgment against the other defendants should be made to include Smith; and to show that Smith was an interested party in the transaction, it was proposed to bring in a bill of acceptance for 1,000*l.*, which had been made payable by the plaintiff to all the defendants, and the other defendants had indorsed it to the defendant Smith, and to him it was paid. It was

Lovell

objected that this document could not be received in evidence on a rehearing.

Mr. Baron Alderson gave judgment as follows:—In this case I took time to consider whether or not I should agree to the motion for setting aside, for irregularity, an order which had been obtained to prove a document *viva voce*. It was pressed very much upon me in the course of the argument, that it was the settled practice in the Court of Chancery to admit those orders *ex parte* as a matter of course. It appears to me upon the whole of the argument, that the principle of the thing lies altogether the other way.

At a rehearing the general rule is this—distinguishing it from an appeal—that all evidence which was capable of being given at the time of the hearing, though it was not given, may be given at the rehearing; but that on an appeal, the evidence only which was actually given at the hearing, is capable of being given at the time when the appeal is heard; and for the very best of all reasons, an appeal is from a judgment of the Judge to another tribunal; and it is therefore only justice to the Court below to act on the same grounds on which the Court below acted; but a rehearing being before the same Court, is merely an application to that Court upon fuller investigation to determine the question which it has before decided upon less information.

An appeal in the Court of Chancery has no doubt the nature of a rehearing. It partakes of the double character of both the one and the other. It is a rehearing but before a different Judge. I have sent to the Court of Chancery, and I find on the best investigation that there is not any settled practice at all on the subject. Out of three Registrars that have been consulted, two are of opinion that it is not an *ex parte* application, and one that it is an *ex parte* application; and we find in an old manuscript book of Mr. Deave's, who was a registrar or secretary to seven successive Masters of the Rolls, a note to this effect:—"That on a rehearing, further evidence and further documents may on some occasions be produced," the effect of which would rather be to show that it was not an *ex parte* application, for, as he expresses it, the production will be allowed "on some occasions" not at all. Now, that being the state of the practice in the Court of Chancery, and there being no settled practice in

Hicks et al.

this Court on the subject, it comes to be considered what is the principle which ought to govern it; and the best way is to settle the practice as much as one can, consistently with right reason and principle. That being so, it appears to me that it would be drawing too nice distinctions if I did not hold it as a general rule, that that evidence which might have been given at the time of the hearing and no other, may be given at the rehearing. In this Court it is the settled practice to specify the documents which are to be proved *viva voce* in the order for proving them. If, therefore, a party had obtained any order to prove particular documents *viva voce* at the time of the hearing, of course he may put in under that order such of those documents as he may be advised at the rehearing; but if the new documents were not included in that order, I think the production of those new documents at the rehearing is new evidence, and that I ought to hold that new evidence cannot be produced at the rehearing without a special order. The result of this opinion is, that the order in question must be set aside, but as the point is new, without costs.

I ought to add; that it appears from the note of *Walker* v. *Simonds*, as cited from the Registrar's book, that the application in that case was not *ex parte*, but that on the contrary, *Sir Samuel Romilly* was heard for the defendants. That case, therefore, is an authority for granting the present motion.

Order accordingly.

The plaintiff then made a special application that the document should be admitted.

Mr. Baron Alderson.—My own opinion is, that parties ought not to be allowed to produce new evidence upon a rehearing; but it has been done over and over again, and I must take the practice as I find it. It is certainly very objectionable; and where the rehearing is before another Judge, it is a crying evil; but it being the practice I must allow the documents to be proved.

The case was then reheard on the petition, and *Mr. Baron Alderson* gave judgment on the 21st June, 1837, as follows:—

I have again maturely considered this case. I intimated in the course of the argument, after having fully heard the acute observations of the Counsel for the defendants, that I saw no reason to change the opinion I

Lovell v. Hicks et al.

Macintosh et al. v.

before delivered on the main question in this cause. I was then, and am still satisfied, that the plaintiff has made out a case of fraud entitling him to relief in a Court of Equity. The extent of that relief was the subject of his petition for a rehearing; and upon that I now propose to give my revised opinion.

It seems to me clearly established, as it did before, that the rest of the defendants had no knowledge of the fraudulent misrepresentations made by Hicks; but the money paid by the plaintiff in consequence of those misrepresentations, has been paid to all under a joint contract by all, and they have all signed the receipt. As to Todd and Watson, there is nothing to show any knowledge by the plaintiff of their particular interests; and even as to Smith, I think that on the former occasion I placed too much reliance on the circumstance spoken to by Todd. On more full consideration I am satisfied that in this respect my judgment was erroneous, and that what would unquestionably have been the rule at law ought also to be considered the rule in equity. At law they would all have been equally bound to repay the plaintiff the money received from him upon a consideration which had failed altogether. This was my own impression when I first heard the cause.

I am now satisfied that the decree must be varied as to the 3,000*l.* paid, by directing that it be repaid by the defendants, and that the plaintiff is entitled generally to the costs of the suit.

Decree accordingly.

MACINTOSH AND OTHERS *v.* EVERINGTON AND OTHERS.

In the Court of Common Pleas.—Before the Lord Chief Justice Sir N. C. Tindal and a Special Jury.—February 25, 1836.

THIS was an action brought by the plaintiffs against the defendants for infringing a patent granted to the plaintiff, Charles Macintosh, on the 17th of June, 1823, for "a process and manufacture whereby the texture of hemp, flax, wool, cotton, and silk, and also leather, paper, and other substances may be rendered impervious to water and air." The proceedings commenced by the plaintiffs

Everington et al.

obtaining an injunction *ex parte* against the defendants, which, on application and argument, was dissolved by the Vice-Chancellor, leaving the plaintiffs to bring such action as they might be advised, reserving the question of costs.

Mr. Attorney-General (*Sir J. Campbell*), *Sir F. Pollock*, *Sir W. Follett*, and *Mr. Watson*, for the plaintiffs.

Mr. Sergeant Wilde, *Mr. Sergeant Bompas*, *Mr. Sergeant Talfourd*, and *Mr. Rotch*, for the defendants.

The declaration was in the usual form. The defendants pleaded that there had been no grant of letters patent; that the invention was not new; that the specification did not fully describe the invention.

Mr. Watson explained the nature of the pleadings, and

Mr. Attorney-General (*Sir John Campbell*) stated the case as follows :—

My Lord, and Gentlemen of the Jury, my Learned Friend has stated the various issues joined; and you, Gentlemen of the Jury, will have to decide whether Mr. Macintosh's patent for making waterproof fabrics for cloaks and other articles is valid or invalid. The cloaks are now very generally known, and have obtained great celebrity, and are of the greatest utility, so much so, that the patent has become almost as well known as the celebrated Mr. Watt's for steam-engines. Gentlemen, the patent was taken by Mr. Macintosh in 1823, and has been respected generally by the public till Messrs. Everington and Ellis, and others acting in concert with them, within a few months, have infringed the patent right. The circumstance of no one having before called into question the right of the patentee till within about two years of its expiring, may be taken as a strong presumption in favour of the validity of the patent. Now for the first time is the invention invaded, and an attempt is made to upset the patent, by stating that Mr. Macintosh was not the inventor; that he had not fully specified the nature of the process sufficient to enable a workman to pursue the invention, as is required by the conditions of the patent. Before the patent, many endeavours were made to obtain a substance which, in rendering fabrics water or air proof, should still retain flexibility: there were cements of different kinds attempted to be used, but without success. Mr. Macintosh applied Indian-rubber, or caoutchouc; but I will call it India-rubber. The

Macintosh et al. v

cement is made by dissolving that substance, and of that alone; the great object was to obtain a solvent for India-rubber, which solvent should be evaporated, and thus leave the India-rubber as a cement between two fabrics, thereby making those fabrics impervious to air and water. These materials so combined became of great value, being flexible as well as air and water tight. He specified his patent in the following manner. [Here the Learned Gentleman read the specification.*]

---

* The specification is as follows:—

"To all to whom these presents shall come, &c.—Now know ye, that in compliance with the said proviso, I, the said Charles Macintosh do hereby declare, that my said invention doth consist in a manufacture of two or more pieces of linen, woollen, cotton, silk, leather, or paper, or other the like substances, any or either, or combinations of any or either, the same cemented together by means of a flexible cement, the nature of which said manufacture is, that it is impervious to water and air. And, in further compliance with the said proviso, I, the said Charles Macintosh, do hereby describe the process which I have found the best for performing the said manufacture, by the following description thereof; that is to say: I prepare caoutchouc by cutting it into very thin shreds or parings, and then steep it in the substance which is produced in making coal-gas, commonly called coal-oil. The quality of these ingredients is extremely various, and the relative proportions to be employed must depend on the quality of each; but when the caoutchouc is of the best quality, and the oil pure, from ten to twelve ounces of the former to a wine-gallon of the latter, will be found to answer. This infusion I submit to a gentle heat, obtained from a water or steam bath; and I employ constant trituration, until such time as the ingredients are reduced to a thin pulpy mass, when to render the whole as homogeneous as possible, I pass it through a very fine wire or silk sieve or searce; and if this part of the process has been duly followed out, the varnish will then be without any granular particles, and will in appearance resemble thin transparent honey. Fabrics or substances, effectually united by cement thus prepared, in whatever way the union is effected, become both air and waterproof; but, with a view to prevent the cement from appearing upon the surface of the manufactured article, and to ensure at the same time a perfect union of the substances, I, in the first place, distend the substances to be united, and with a brush, or other suitable instrument, lay upon the surface of each an uniform layer or coating of the varnish or cement; and when this coating has, from evaporation of the oil, which is extremely volatile, acquired a clammy viscous consistency (and this will take place in a shorter or longer space, in proportion to the heat of the atmosphere and the current of air in which the manufacture is carried on, or to which the coated surface may be exposed), I apply the varnished side of both substances to each other, and, by means of a callender or rollers, or other suitable means, I powerfully press the fabrics or substances together, whereby they become united, and are rendered a compound fabric or substance.

Errington et al.

Thus, Gentlemen, you will perceive that Mr. Macintosh fully and fairly describes the nature of his invention; he describes the process by which he carried the same into effect; he points out what before was known, and distinguishes that of which he claims as his invention, which consists in applying of the flexible cement composed of dissolved India-rubber in the manner he described, by putting it between two surfaces of fabric and then pressing them together, so that they should be united, and become, from the properties of the cement, air and water tight.

The patentee had considerable difficulty to encounter in bringing the invention into general public use. There was a prejudice got abroad, that although the cloaks kept out rain they stopped perspiration, and hence was injurious to health; but, after going to great expense, the use of the patent material became popular, and the invention

And thereafter I expose this compound fabric or substance in a stove-room, or other suitable place, to a heat of from one hundred to one hundred and forty degrees, for the double purpose of maturing the manufacture, and obtaining a farther evaporation of the oil, which, while it remains, gives off a disagreeable effluvium. When the substances to be united are of an open texture, or not of a smooth and uniform surface, I apply a greater number of coatings of the cement or varnish; and when three or more fabrics or substances are to be united together, I coat with the varnish the substance or substances to be enclosed on both sides, and complete the process as before suggested. Further, in some cases it may be sufficient to apply the layer or coating or coatings of the varnish upon one side only of one of the fabrics or substances, applying the other fabric or substance uncoated upon the clammy viscous surface of that which has received one or more coatings of the varnish, and then complete the process as before suggested. Now, whereas caoutchouc in a state of solution, and dissolved in manner hereinbefore described, is well known to chemists and others, and not new, therefore, I do not claim any right, title, or privilege in respect to the same; but a manufacture of two or more pieces of linen, woollen, cotton, silk, leather, or paper, or other the like substances, any or either, or any combinations of any or either, the same cemented together by means of flexible cement in manner hereinbefore described, being to the best of my knowledge and belief entirely new, and never before used in these kingdoms.

"I do hereby declare this to be my specification of the same, and that the said specification doth comply in all respects fully and without reserve or disguise with the said proviso, in the said in part recited letters patent contained; and I do hereby propose to maintain my exclusive right and privilege to the same.

"In witness whereof, &c.

"C. Macintosh."

Macintosh et al. v.

has only lately become very profitable. There was sometime back negotiations between Mr. Macintosh and the defendants for entering into partnership, but it went off, and now the defendants were making cloaks and other articles precisely according to the specification I have read to you; (that is to say), according to the substance of it, and certainly upon the principle on which that specification is founded. It therefore became necessary that the plaintiffs should vindicate their property, by bringing this action, and various pleas have been put on record. They say no patent was granted; in answer to this, we have the patent in Court. They also say that they have not infringed; I shall be enabled to prove most distinctly that they have. I shall show that, in the most public manner, they exposed these description of articles in their shop for sale. We have some which we have purchased. I am, however, inclined to think that the two pleas which they will principally rely on, are, first, that this process was publicly practised before the granting of the plaintiffs' patent; secondly, that there is no sufficient specification. I propose to make a few observations on each of these pleas. With respect to the novelty of the invention, there had been before this patent many attempts on this subject, and various experiments; that is the case with every invention; and if it were to be decided that a patent is invalid because experiments have been before made which approach the patented invention, which have come even within a step of it, were such to be held to be the law, no patent could possibly be established. Many of the most important inventions by which the manufactures of this country have been so greatly improved have been but one step beyond what has been done for ages, and many have been but one stage beyond fruitless experiments which have been made and abandoned. Various cements had been made, but they, not being flexible, did not meet the object desired; there were, in all those instances, other ingredients used which injured the properties of the other material, or India-rubber, therefore all previous trials were unlike that of Macintosh, and this is proved by the fact that, until his patent, such waterproof articles were not to be purchased, indeed they were not known.

I will now turn to the sufficiency of the specification: I understand, from what has taken place in the Court of

Everington et al.

Chancery, that my Learned Friend will endeavour to show that the solvent used by the patentee is not properly described; it is called *coul-oil*, which is one of the products in the distillation of coal for making gas.

Gentlemen, in considering this specification, it should be understood that the solvent forms no part of the invention; we do not undertake to show how coal-oil is manufactured; we state we use coal-oil, and that being a material which is known and can be purchased, that is sufficient; it is not to be expected that an inventor of one thing, shall of necessity, know how to make all the materials used in the production of his invention; it is sufficient that such materials should be known and purchaseable. The excellence of coal-oil is this, it is highly volatile, it having dissolved the India-rubber, is quickly evaporated, and leaves the India-rubber between the two surfaces of cloth, by which the fabric produced is rendered flexible and waterproof.

I will now call before you evidence by which I shall be able to show that the invention is highly useful, that it may readily be carried into effect from the specification, and also that the defendants have infringed the patent.

Nicholas Wray, examined by *Mr. Sergeant Bompas.*—I am engaged with Macintosh in his manufactory; I have seen the specification. The patent was taken in 1823. India-rubber was used before, as was also coal-oil. Coal-oil is a substance which floats on the top of tar. The India-rubber is cut into small pieces, it is then put into coal-oil; we make it according to the specification; in exact accordance with it. That specimen was made according to the specification; water will not pass through it; I cannot say as to air. I worked at Manchester ten years; there is none now made at Glasgow by Macintosh.

Cross-examined by *Mr. Sergeant Wilde.*—I had nothing to do with the material brought from the gas-works, nor do I know of any operation to which it is subjected to prepare it as a solvent for the India-rubber. The solution was brought to me prepared. The India-rubber was put into coal-oil, it stood there for a certain time, and the mixture was rubbed through a sieve to render it more even. We formerly put the dissolved India-rubber on to the cloth with a brush, and laid it smooth with a

Macintosh et al. v.

spatula. The cement is now put on by a roller and is spread by a brush.

James Fleming, examined by *Sir William Follett.*—I have been in the service of the plaintiffs; I superintended the making of waterproof fabrics; I obtained coal-oil from the Glasgow works. The coal-oil floats on the surface of ammoniacal water in gas works. The India-rubber is cut into small pieces and dissolved. I remained in the plaintiffs' employ till about 1825. I have not been engaged with them since.

Cross-examined by *Mr. Sergeant Wilde.*—I received the oil from the gas works; the plaintiffs have works for purifying coal-oil. Some of the materials which came from the gas works went first to the factory. I have passed through the works; they were distilling the tar-oil; I did not attend to it. The men have free access to these works; there is no exclusion. I was engaged with the plaintiffs before the patent. I believe the process of purifying was carried on before the patent. The cement was put on by a brush, during the time I was engaged, exactly according to the specification.

W. T. Brande sworn. Examined by *Sir F. Pollock.*—I am a chemist, have been so twenty years; I have read the specification of the patent. I have applied that solution to paper, to linen, and to leather, on the plan or mode described in the specification; the result is, that the two coated surfaces adhered together and became impervious to water. I have made some other experiments with other substances by the direction of plaintiffs, with a mixture made by a person of the name of Clark, of Bridgewater. I endeavoured to dissolve caoutchouc in a mixture of linseed oil and oil of turpentine. I found that by boiling the caoutchoue in the linseed oil, according to the directions in the paper which was given to me, the caoutchouc was decomposed, it became viscid, but it would not dry; but so far altered that it was, in my opinion, incapable of being applied to the uses there represented. The action of spirits of turpentine and linseed oil on India-rubber are perfectly different from the action of coal-oil, which softens it in the first instance, and then reduces it to a pulp. In that state it may be further diluted with coal-oil to any extent that is necessary, and then spread over linen or other articles, when

Everington et al.

the coal-oil gradually evaporates, and leaves the pure caoutchouc in, I believe, an unaltered state. I am acquainted with the substance called coal-oil, which is, I believe, the common term used in gas works. I have known it as such certainly before the date of this patent in 1823. I have seen coal-oil myself floating on the water in the gasometer-tank, and capable of being drawn off from the surface of the gasometer-tank. The coal-oil which I used in my first experiment was sent to me by the plaintiffs. I do not know whether if coal-tar be distilled it yields as one of its products coal-oil. I never distilled coal-tar to obtain coal-oil from it. I have obtained coal-oil from gas works myself in small quantities, and the use of the term coal-oil in the specification could not, in my judgment, mislead any one. The mode of purifying coal-oil is well known. I believe that it either is purified or was purified on a large scale either in the gas works, or some establishment belonging to them, by distillation. I should call it coal-oil both before it is purified and after it is purified. It may be more or less purified, still it is coal-oil, and I think any chemist or any common workman of competent skill would know that was the way to purify it.

Cross-examined by *Mr. Sergeant Wilde.*—There is not any article that goes by the name of naphtha which is obtained from coal-oil; I never heard of the article passing by that name obtained from the ingredients produced by the distillation of coal. I have seen coal-oil floating on the water at the gas works in the gasometers; it was not what we should chemically term a greasy substance, but a highly volatile oil, in the natural state, produced by the coal, and deposited in the gas meters and gasometers. I can speak to having subjected it to experiment, and that it is not a fixed but volatile oil; and I have heard that it was manufactured on a large scale by one of our gas companies, and that they found they had no sale for it, and therefore gave up the manufactory. I only speak from hear-say; I think the gasometer which I saw held from three to four thousand cubic feet. I cannot speak to the quantity of oil I saw floating on the surface of the water; the depth of the film I do not know. I never tried to dissolve India-rubber in that oil which so floats, but I should presume it would. I do not know whether the article that is now produced in gas works in the pre-

Macintosh et al v.

paration of the gas, and which passes by the name of coal-oil, whether that first passed by the name of coal-tar and afterwards took the name of coal-oil; I presume that which I used had been collected from various sources by distillation. There are several oils which will dissolve India-rubber, but there are few, I believe, that will dissolve it so as to permit it to be restored by evaporation to its original state; some of them decompose the India-rubber, but not all of them. In the first experiment I used a pint of coal-oil, in the second two gallons were employed. I should think very probably they employed the tar and other materials collected from the various parts of the gas apparatus for the purpose of obtaining coal-oil by distillation. It is one of the products of the destructive distillation of coal. Whenever I have attempted to dissolve India-rubber in oil of turpentine I have obtained a glutinous compound, which certainly did not leave it in a state fit for its original purpose. I believe it a common thing to soften it in oil of turpentine; when I say dissolved, I mean a *bonâ fide* solution, not merely softening down India-rubber: I apprehend it cannot be dissolved in linseed oil without decomposition; heat must be applied, and then a portion of the India-rubber will be decomposed. Oil of turpentine will soften India-rubber, and reduce it, but with linseed oil it will not form a fair solution, nor be applicable to the same purposes. I believe the term coal-oil applies to the product of the coal as it is produced in the manufacture of gas, as well as to the real oil after it is rectified and purified. There may be a difference between the naphtha which is obtained from Italy and that from Trinidad; I think it is found colourless; but that which I have generally seen has been brown: it is naphtha when it is in a pure and highly volatile state; petroleum is more viscid; it is another form of bitumen: in fact, I believe when petroleum is distilled it yields a quantity of naphtha, and there remains behind a substance called asphaltum. I performed the experiment which I produced on two or three sheets of blotting-paper, and two or three pieces of cloth of about the same size with a brush. I prepared them about the middle of December. I passed, in fact, a heavy roller over them; I was not alone when I prepared this; no person but my assistant was with me; neither Mr. Macintosh nor Mr. Hancock, nor any person connected with them, were with me. I dissolved the

Everington et al.

caoutchouc in oil obtained from the gas works, under the name of coal-oil. I certainly did not go to the gas works to collect the oil myself, and bring it home and dissolve the India-rubber. I presume all the specimens of coal-oil which I have seen have been distilled. I presume it; I am not certain that they were. I should presume also that the ammoniacal liquor is separated before they distil the remaining products. If I were in a gas establishment, and anxious to collect as much of the oil as possible, I should endeavour to pour it off as free as might be from the other ingredients and materials, and then I should re-distil it. I have never seen the process of preparing the solution at the plaintiffs'.

Re-examined by *Sir F. Pollock.*—Coal-oil is certainly subjected to a process of distillation on its first coming over. All the products of coal are necessarily products of distillation; the tar, the ammoniacal liquor, the coal-oil, and a number of ingredients and substances which are formed, are all products of distillation. I have not the least reason to think there is any difference between oil after the first distillation and after its second distillation, except in its being more pure. I have reason to doubt, when it first comes over, whether it would dissolve caoutchouc: a friend of mine was anxious to make a solution of caoutchouc, and he applied to me to get some coal-oil; I recommended him to go to a drysalter's for it; he went to Mr. Jones, in Gracechurch-street, and procured it, which he put into my hands, and I dissolved the India-rubber; that was the article I effectually experimented with.

Henry Warburton, Esq., M.P., sworn. Examined by the *Attorney-General.*—I have for a good many years past paid attention to subjects of philosophy and chemistry; I am not aware of any such process being known before 1823, when this patent was taken out; for when it first came out it was spoken of as a process quite new by chemists. I remember its being produced at Dr. Wollaston's house. There was a Society of gentlemen, called the "Chemical Club," which consisted of the most distinguished philosophers of this country, of which I was a member; it was frequently the subject of conversation there, and spoken of as a novel and ingenious process; if there had been any other solvent known I must have

Macintosh et al. v

heard of it. I certainly consider it a novel and ingenious process. I have no doubt that, from reading the specification, the fabric might be made; instead of manual labour, there may be power from the steam-engine, and various processes, for making the fabric more smooth at the time of laying on the dissolved India-rubber. I have never distilled coal-oil myself, but I have been at the gas works, and I have seen the product of destructive distillation of coal. The obvious mode to purify it is to distil it with a moderate heat, though I cannot say so from any experiment: I should say that the heat at which it distils is so low that it could not undergo decomposition during the process.

Cross-examined by *Mr. Sergeant Talfourd.*—I must have first heard of this process about 1823 or 1824; I was first informed of it by Dr. Wollaston as being a substance perfectly flexible and waterproof, and very light in its texture. I am not aware that the same kind of result had ever been produced before; I never heard of any thing made impervious to water and air, and being at the same time flexible, and that would bear the creasing about the person; nor am I aware that a gentleman named Clarke was manufacturing a patent article under the description I have mentioned: I never heard of it. A solution of India-rubber in ether has long been known, as described in works, as a varnish which was applied for rendering air balloons air tight; this varnish was not interposed between two folds, but as an exterior coating. There is great advantage in having it interposed between two substances, particularly for the purpose of making articles air-tight and waterproof, instead of spreading it over the surface.

Re-examined by the *Attorney-General.*—I should think that the purified coal-oil is affected in a small degree by the quantity of tar it has in solution; it may require a larger quantity to produce the same effect if in an unpurified state. The oil found floating on the ammoniacal liquor, and the oil which is produced by the distillation of tar, are, I have no doubt, the same oil, but I have not made any experiment; they are both coal-oil, possessing the same qualities. When coal is distilled for the purpose of making coal-gas, that is what I call destructive distillation. In order to produce it, a high

Everington et al.

temperature is required, but where it has been produced, then it will evaporate at a low temperature, and that I do not call destructive distillation.

George Frederick Daniell sworn. Examined by *Sir F. Pollock.*—I am professor of chemistry at King's College; have read the specification. Coal-oil is an article well known in commerce; I knew it before the date of this patent, which was in 1823, but I cannot assign a date to my first knowledge of it. I have known it ever since there have been gas works; I got it from a drysalter, I think, in Thames-street, at Price and Co.'s. I sent for it as coal-oil. I wrote down on a piece of paper, "Coal-oil for the solution of caoutchouc;" which I sent by my assistant; and he returned home with the article. It was well known to me before, though I had none of it by me. I then pursued the process of dissolving the caoutchouc, and applying it to substances in the manner described in the specification, and found it succeed perfectly. When an article of this sort has been discovered, I presume there may be, in the course of the manufacture, improvements in the mode of laying down the cloths to receive it. Mechanical improvements would naturally occur to a person who was working on a large scale to do away with manual labour. They are not at all essential to the manufacture itself. This is a portion of the solution that I used; I have a specimen of the India-rubber after it has gone through the process of evaporation sufficient to show the caoutchouc; it contains all the properties of the caoutchouc. According to my experience, this, which is the evaporated solution, is not distinguishable in any of its properties from India-rubber; it has a slight smell, but nothing else, which is the remains of the coal-oil.

Cross-examined by *Mr. Rotch.*—In trying these experiments I sent to a drysalter for the coal-oil; I cannot say where I should have sent for it in 1823; perhaps to the gas works. When I say it is now better known, I mean its use is more extensive. I do not think any person in 1823 would have doubted what was meant by coal-oil. A great quantity of coal-oil is produced from coal-tar as well as from other products of gas works.

Re-examined by *Sir F. Pollock.*—In my judgment the substance that is to be used is clearly pointed out by the specification.

Macintosh et al. v.

James White sworn. Examined by the *Attorney-General.*—I went to Ellis and Everington's shop to purchase a waterproof cloak. I bought one that they recommended, and which they stated to be of their own manufacture.

Cross-examined by *Mr. Sergeant Talfourd.*—I am sure they told me that it was manufactured by themselves; it is labelled, "Fanshawe's improved Patent India-rubber Waterproof Cloak."

Richard Phillips, Lecturer on chemistry at St. Thomas's Hospital, sworn. Examined by *Mr. Sergeant Bompas.*—I have seen the specification of plaintiffs' patent, and have carried through the process as there described; it is such a specification that I clearly understood the mode in which the invention was to be performed. I have had coal-oil for several years; it is well known in commerce by that name. I sent to Mr. Cassell's works, Mill-wall, Poplar, for some; he prepares this oil, and purifies it. I am not personally acquainted with Mr. Cassell. The coal-oil I obtained from him was similar to what I had before used. Coal-oil is an extremely volatile substance; its nature is not at all changed by re-distillation; it is more volatile than coal-tar; if mixed with coal-tar it can be separated by re-distillation. Coal-oil is lighter than ammoniacal liquor. I tried some experiments according to Clarke's receipt in proportions of the substances that were given to me; viz., one ounce of caoutchouc, eight ounces of spirits of turpentine, and seventy ounces of linseed oil; the effect of the linseed oil, on heat being applied, was to decompose the India-rubber. I put the India rubber in a different vessel, and then immersed the vessel in oil, and heated the oil, and exposed the India-rubber to the temperature of the heated oil. I found it had undergone a great change. The India-rubber which was in the oil underwent a similar change. I find that India-rubber, partly decomposed, becomes nearly as tenacious as bird-lime, and cannot be again restored to India-rubber. This experiment was fairly made according to Clarke's direction. I received a piece of a cloak, bought by the last witness; I can see no difference between it and Macintosh's. It is a double texture, and India-rubber is used in the same manner as Macintosh's. I put the piece of cloak into coal-oil, and it dissolved the India-rubber

Everington et al

which was with it; I got the India-rubber from it, and I am satisfied that the cloak had been made of a solution of India-rubber. The materials, in my judgment, are precisely the same.

Cross-examined by *Mr. Sergeant Wilde.*—I think I knew the article coal-oil very soon after the patent was granted.

John Thomas Cooper, Professor of chemistry, sworn. Examined by *Sir William Follett.*—I have seen the plaintiffs' specification; I tried to manufacture articles there described according to the specification; I proceeded entirely according to the process therein mentioned. I succeeded perfectly in making the articles impervious to air and water. I used coal-oil, which I obtained at Mr. Cassell's, to dissolve the India-rubber. Coal-oil is well known; I have known it from fifteen to seventeen years at least; I have seen it at gas works floating on the surface of the ammoniacal liquor; I tried that with the caoutchouc, according to the mode described, and the varnish so produced was equally effective for making fabrics water and air proof. The coal-oil was not re-distilled, it was just taken from off the ammoniacal liquor; that oil is made pure by repeated distillation; it is not necessary to have a larger quantity of it to produce the effect, but it requires a greater quantity of crude-oil to dissolve the same quantity of India-rubber; I call it crude-oil, to distinguish it from the oil that has been re-distilled. The effect is the same, except that it makes the fabric a little more stiff, in consequence of the other matter it contains. The purer the oil the better, so says the specification. The mode of purifying the oil is so well known to chemists, it does not require very deep science to know how to do it, nor any direction in the specification; any person at all acquainted with the subject would know how to do it.

Cross-examined by *Mr. Sergeant Wilde.*—I distilled coal-oil seventeen years ago; it was obtained at that time in small quantities from the surface of gasometer-tanks.

George Lowe sworn. Examined by *Mr. Watson.*—I am a Fellow of the Royal Society, and have been for the last fourteen or fifteen years engineer to the Chartered Gas Company. Coal-oil is produced in making coal-gas; it floats on the surface of ammoniacal liquor. This is

/Macintosh et al. v.

a specimen of the coal-oil produced in the Company's works at Brick-lane, in one of the gasometers; there cannot be less at this time than from 100 to 150 gallons of this volatile oil. I dissolved India-rubber with that coal-oil. In the year 1823 this substance was called coal-oil, volatile oil, and spirits of tar; it had various names; it was known as coal-oil then, but of late years more as naphtha.

Cross-examined by *Mr. Sergeant Talfourd.*—A greater or less proportion of the coal-oil can be obtained in gas works according to the circumstances under which the process of condensing or cooling the gas is conducted.

Re-examined by the *Attorney-General.*—There is always a considerable product of the coal-oil in gas works, independent of any peculiar means of condensing, in addition to that which may be in combination with the tar. I should say the supply altogether, speaking within moderate bounds, would be at least 3,000 gallons per week of the coal-oil from the first distillation of the coal in this country.

Alexander Gardener sworn. Examined by the *Attorney-General.*—I am a practical chemist; I have read the plaintiffs' specification, and think there can be no difficulty in making the fabric from the direction thère given; I never heard of a similar process previous to his patent; I have made experiments in accordance with the specification, and applied the dissolved India-rubber to fabrics, which made them impervious to water; I used two kinds of coal-oil; one I obtained from Mr. Cassell, the other I think from Mr. Blunt. I have known coal-oil ever since the introduction of gas; it is obtained in the distillation of coal, and is commonly called and well known by the name of coal-oil. I know the coal-oil in its crude state, as it is found after the distillation of the coal; I saw it at the time gas-light was introduced: I received the product from Mr. Winsor, the first introducer of gas. I have made experiments with coal-oil in its original form, and it answered equally well; when the coal-oil is evaporated, the India-rubber remains in its original form, and with its original properties.

Cross-examined by *Mr. Rotch.*—The specification directs that the substances that are to be united are to be

Everington et al.

stretched on frames before they are put together; I found nothing in my analysis that told me about coal-oil; that was impossible for me to tell. I found India-rubber interposed between two fabrics; it appeared to me to resemble the invention described in the plaintiffs' specification.

Re-examined by the *Attorney-General.*—The substance before it has been re-distilled, and after it has been re-distilled, is still called coal-oil.

Edward Turner, professor of chemistry at the London University, and F.R.S., sworn. Examined by the *Attorney-General.*—I am acquainted with the plaintiffs' patent and specification; I knew of the invention before it was first made public in 1823; in my opinion at that time the invention was new. I am acquainted with the manufacture of coal-gas in a general way, and have visited many gas manufactories; I have known coal-oil for a number of years; I became familiar with such subjects about 1823. The specification appears to me to properly describe the process.

Arthur Aiken, Secretary of the Society of Arts, sworn. Examined by *Mr. Sergeant Bompas.*—I remember when the plaintiffs' patent came out: according to my judgment, it was at that time a new invention; I never heard of any thing similar to it before. I know the substance called coal-oil, it is one of the products obtained in the manufacture of gas: if it is wished to be made pure, the common mode of doing so would be distillation.

James Bowman Neilson sworn. Examined by *Mr. Watson.*—I have been manager of the Glasgow Gas Works eighteen or nineteen years. In making gas we have deposits of tar, ammoniacal water, and coal-oil, and these substances are separate and distinct. The first person who obtained it from our works was Mr. Macintosh; before he took it we treated it as refuse.

George Holworthy Palmer, sworn. Examined by the *Attorney-General.*—I am manager of the Metropolitan Gas Works. Coal-oil can be drawn off without difficulty, being specifically lighter than the tar and ammoniacal liquor, and floats on the surface; sometimes when the oil is taken immediately from the gas mains, it is in nearly as good a state of purity as that which has been redistilled.

Macintosh et al v.

J. G. Children, Secretary to the Royal Society, sworn. Examined by the *Attorney-General.*—I am acquainted with the plaintiffs' mode of making cloth waterproof and air-tight; as far as my knowledge goes it was perfectly new when first introduced at the time of the patent.

Cross-examined by *Mr. Sergeant Wilde.*—I never heard of India-rubber being applied to fabrics in the same manner as that described by the patentee previous to his patent.

Mr. Attorney-General stated that that was the plaintiffs' case.

Mr. Sergeant Wilde addressed the Jury for the defendants as follows:—This is, undoubtedly, an important case both to the plaintiffs and defendants, as well as the public. My Learned Friend, on the part of his clients, states that the patentee having been at great labour in discovering an invention of considerable value, there ought to be preserved to him an adequate remuneration for that labour by the exclusive manufacture and sale of the article now before us. I agree with him that in a case where an individual has actually discovered some useful invention by which the public are to be benefitted, he should be entitled by law to the exclusive sale of the articles patented; but, on the other hand, on behalf of trade in general, I maintain that an individual shall not, when the subject is generally before the public, step in and, by an uncertain vague description, lay his hands on some useful manufacture, reserving to himself not something he has discovered, but something which he hopes either he or some other person will discover, and which, when discovered, shall refer back to his patent. My Learned Friend says, that various persons have been engaged in trying to accomplish the object of procuring waterproof articles sufficiently light and flexible to be useful, that the public were within a step of accomplishing this object, and that fortunately his client advanced that step. It is my case that that step was not advanced by him. It had been known for years before the patent of Mr. Macintosh, that India-rubber might be applied so as to render a fabric waterproof. If it is applied to the outside of garments it will be inconvenient and disagreeable, have a clammy appearance, and want renewing; if on the inside it will be still more disagreeable, being next the person. But

Everington, et al.

Mr. Macintosh says he will put a lining to it, and then get a patent for that, the solution that would render it waterproof is well known. In the specification he says he does not claim the solution, but what he claims is the putting two fabrics together, and as they are wanted to stick he presses them. This patent has no other object than putting two pieces of cloth together with a well-known solution of India-rubber between. He has put two things together, and got a patent for it. Now, I say that the circumstance of his applying a known solution to a known purpose to produce a known result, clapping one piece of cloth over another cannot be the subject of a legal patent. I will read the specification of a patent granted many years since to a person of the name of Johnson; he says, "Take flock, such as you put on the paper of a room, and make a lining of that." The patentee says he puts a piece of cloth instead, and all the witnesses on his behalf, say that they never heard of such a process before. The defendants are not manufacturers, but deal largely in all articles of dress, and are glad to sell that for which there is most demand. The only evidence of the infringement is, that certain parties have effected the same object as the patentee, and the witnesses know of no other means than those which the patentee uses to effect that object. When the plaintiffs come on the ground of having advanced one step, and claim to retain the exclusive right to sell this article, they are bound to make out a perfect case. When the Crown grants an exclusive right for an invention, it is granted upon certain conditions, and one express condition is, that the grantee shall, in consideration of that grant, which is for fourteen years, give the public the means of using the invention at the expiration of his patent, in the best manner that he can inform them in a specification, which he is required within a certain time to enrol. There is a class of patents which ought to be narrowly watched, in which there is a vagueness and generality in the specification; and there is in this case an intended vagueness and generality, in order to cover anything which might be discovered by the plaintiffs, or any other persons. My Learned Friend, the Attorney-General, says he claims for his client the exclusive right of selling a coat formed of two pieces of cloth, stuck together by an India-rubber cement. I say, the

Macintosh et al. v.

the other; and I shall therefore pray judgment, first, whether this is not a claim to the others which I have mentioned; and next, whether at least it is not so ambiguous and doubtful, so wanting in clearness in the mode of doing it, so uncertain in what he claims, as to be void? That is my first objection. Mr. Macintosh has claimed more than he is entitled to—he has claimed for all flexible cements; and he now shrinks from that, because he knows he cannot sustain his patent to that extent. But his specification is against him in this; and if it be ambiguous and doubtful, it is equally objectionable. My other objection applies to his conduct in regard to the solution. He was engaged in the preparation of a solution made from coal-oil before he obtained his patent, which process he then kept a profound secret, and conducted not on the premises where he manufactured the cloth, but on premises adjoining, with a separate entrance. He continued to prepare the solution till 1826, when he went to Manchester, where he now prepares it. But does he use that solution? No, nor ever did. What is the use of calling a chemist to produce half a sheet of paper, and to say, we have done this from the specification. The deception of all this is, that a trifling experiment upon a limited scale, where expense is no object, is no test of the same thing on a large scale. Instead of calling the workmen where the contest is, if a particular article is applicable to a particular purpose, not a single workman is called to prove that a yard of this cloth was manufactured in the manner alleged, but for some purpose they call chemists to swear it could be done. What need of experiments where the thing has been carried into effect, and has become a matter of trade; if you want experiments, a hundred cloaks made from a certain number of gallons of coal-oil would be an experiment worthy of being submitted to your attention, but the plaintiffs cannot prove that they use the oil as it comes from the gas works. What is the mode in which the solution is rendered applicable to the purpose? It is a secret; and when any is wanted for experiment, it is bought ready prepared at the drysalter's. If it is so easily obtained, why do not the chemists make it themselves? A witness has produced a specimen of cloth of his own make from India-rubber, solved with the crude coal-oil. Apply your nose to it. Now that is made from coal-oil in its natural state. Look at that

Everington et al.

article as a useable and saleable article, and compare it with the cloak purchased at the defendants', and tell me what would be the degree of competition which would prevail in the market, between the coat of that description and one made in the manner I have just shown you; don't let my Learned Friend talk of imperfect specimens, they are the best he could produce for his client; yet he has a factory of workmen, and could produce specimens of the best form. He cannot prove that he ever used a single ounce of the nasty liquid for the purpose of his manufacture. The specimens he produces are imperfect, offensive, and wholly unsaleable, which proves that he, when he said the best means he had discovered was the application of coal-oil as a solvent for the India-rubber, made a serious mistake. He says he told you it must be pure, and that you must know that to make it pure you must distil it; that is an odd word to apply to purifying. Can any man at this time make cloaks from the specification, so as to compete with either the plaintiffs' or defendants'? Mr. Macintosh does not even use the coal-oil that he can buy, he has discovered a mode of preparing the solution by distillation, or in some other mode so peculiar, that he keeps it a profound secret; he is a step in advance in one thing, that is, in having discovered a mode of making a solution, but the nature of that step he does not disclose, neither does he claim it as a part of his patent. When he talks of the oil being pure, if he meant that it should be distilled, why did he not say, take the articles and dissolve them in highly rectified coal-oil, that would have informed us at once what proportion crude oil bears to highly distilled; they say that the crude oil dissolved ten ounces to a gallon; what says the specification? "When the caoutchouc is of the best quality, and the oil pure, from ten to twelve ounces of the former to a wine gallon of the latter will be found to answer," giving the very quantity attached to the crude oil, not the quantity according to them, but which, according to them, is eight ounces instead of ten; so that it shows Mr. Macintosh knew well, if he could only lead persons to attempt to waterproof the cloth with coal-oil produced in making gas in its crude state, he was quite safe, not only during his patent, but ever after, as the article produced would be so nasty as to be perfectly useless and unsaleable. It is therefore clear that he intended to conceal the only

Macintosh et al. v.

article which could be usefully applied, and has concealed it to this very moment. The principle of this invention was well known before the plaintiff obtained his patent; I will show what has been its progress up to the point when my Learned Friend says his client got a step in advance. In Baron Humbolt's work published in 1819, called "Personal Narratives" of his travels, he says, "In preparing the milky juices of the hevea and some other trees, there appears a striking analogy between the juices which abound, and those in the caoutchouc, and the impermeable cloaks manufactured in Spanish America are made by placing a layer of milk of the hevea tree between two pieces of cloth." This is the caoutchouc as it comes from the tree in its natural state, and in the state to which it is most desirable to reduce it; if you can reduce India-rubber to a state similar to that in which it comes from the tree, the effect of its being put between two pieces of fabric is to render it waterproof. He also says, "Placing a layer of the milk between two pieces of cloth, exhaled an animal and nauseating smell. Which seems to indicate that the caoutchouc, in coagulating, carries with it the casuem, which is perhaps only an altered albumen." I shall call a witness who will prove that, before the date of the patent, there was to be found in Demerara, in the store-houses, cloaks made waterproof by India-rubber between two folds, and that such cloaks were publicly sold in Demerara. Then, I ask, what is the invention of Mr. Macintosh? I admit that if the India-rubber, being in the state in which it exudes from the tree, could be used for this purpose, but coming here it changes to a state no longer fit and applicable, and that it requires art to restore it to its original state of solution,—I admit that for the means of restoring it to its state of solution, and making it capable of being used for making fabrics waterproof, he discovering such mode would be entitled to a patent, but that is not what Mr. Macintosh claims; he disclaims the solution, and claims the putting India-rubber, while in a state of solution, between two cloths; the means by which it is restored from its altered state when dry, and exposed to the atmosphere in a state of solution, being out of the case, and no part of his patent. The tree is perfectly well known to those parties, for in the specification to a patent obtained by Mr. Hancock, in 1825, he says, "The liquid I have mentioned is brought

Everington et al.

into this country from certain trees which grow in South America." I show a public document enrolled in the Patent-office, to prove that the nature and quality of this thing was well known. Couple these together: here are the juices of the tree as common India-rubber, here are the juices of the tree placed in a liquid state between two fabrics perfectly well known. The object is to evaporate and get rid of every substance but a thin layer of India-rubber, with as little of foreign matter as possible. I shall prove that socks were publicly sold, consisting of two pieces of fabric stuck together with India-rubber. Here is the principle of two fabrics united by a flexible cement, and that flexible cement is India-rubber, and nothing remains to distinguish it from the most perfect identity. But, my Learned Friend says, theirs is put in in a state of solution, and the other entire. That which is introduced in addition to the India-rubber, for dissolving it, is but the vehicle to apply it, therefore it will be most material to show that the whole principle of this patent was known. Here is an article joined together by a solution of India-rubber; it is part of Mr. Green's balloon, which was broken at sea, I believe on the day of the coronation of George IV. There you have the principle of uniting two fabrics by a solution of India-rubber, and that is the patent; and in a balloon, an invention made public enough, Mr. Green will tell you that he afterwards cut up the balloon and made cloaks of it, and gave them to his friends, who wore them. The patent is not for cloaks only, you must not make balloons, nor socks, nor any other article. Mr. Macintosh will acknowledge that he used this known solution to produce this known effect, but will say that he used it in a particular manner, and that, therefore, he is entitled to his patent: the solvent as described he does not to this hour use. Does he use the brush? No. He applies the solution not in the manner stated in his specification, but he uses a gauge, and the cloth with the solution upon it is passed under it, and is thus spread. This is a remarkable instance of a patentee coming into Court and complaining that his patent has been infringed, and yet he is carrying on his manufacture by a mode wholly different from the mode described in his specification. Tell me whether the pressure that is applied is the same; whether the mode of spreading the solution is the same; or whether the

Macintosh et al.

mode of stretching is the same. I have never witnessed an instance where a man claimed so little, and of that little continued to use still less. The witnesses from the gas works prove that he never, but in one instance, purchased the coal-oil separately, and it slipped out from several witnesses that naphtha was another name for coal-oil. The chemists tell you that they do not know how it is prepared. The evidence of chemists and the gas works people is irrelevant, because it is no part of my case to say that, in making gas, coal-oil is not produced, but I say that it never has been collected in a separate state as an article of trade; the single instance to which I have referred only making the deviation from the general course; and saving my friends the trouble of disputing that a certain quantity, though I believe a very inadequate quantity, of what they call coal-oil in a state unfit for use, without undergoing further process, may be taken, is matter of no dispute; but that that which is produced at the gas works is applicable, and that you could make a garment fit for any gentleman to wear with comfort, I utterly deny. Looking therefore at the extraordinary feature of the case of a patentee not working by his own patent, and looking to the details of the mode of his carrying it on, compared with the simplicity of his patent, it is for you to say whether or not this is new in the sense in which it must be new to sustain the patent. The plaintiffs bring their action against the defendants for having made a cloak which consists of the union of two fabrics by means of the solution of India-rubber; but Mr. Macintosh's patent is for a particular mode, and what evidence is there that the defendants' have used his mode? Upon the evidence, what reason is there to suspect that they were in possession of the solution used by the plaintiffs? My Learned Friend will say, "My witnesses guess this must be made in the same way, because they know of no other." Is that evidence on which to bring an action? The defendants are under no obligation to disclose what is the solution which they use, and the plaintiffs' evidence is but a loose guess. Mr. Phillips says, "I cannot tell by what means the India-rubber in defendants' cloak was dissolved." I apprehend that it had been dissolved, because I know of no other way in which the same effect could be produced. I deny the validity of the argument that, because we do

Everington et al.

not show our mode, you are to presume that it is theirs. There are various ways in which it may be done; it may be done with native juices; but it is clear that the solution of India-rubber to make it applicable to this purpose is a valuable secret which the plaintiffs keep. I apprehend that the specification will be found deficient, the patentee's claim being larger than he can support. I should have been glad to have seen some of the specimens produced by the crude-oil, and to have had some experiments made with materials of a light texture; but all the specimens that have been produced only disprove the specification, that the directions therein contained were the best known to the patentee. He never used crude-oil, and never will use it, for it is not in a state to be used, except for the purpose of experiment.

James Stevens sworn. Examined by *Mr. Rotch.*—I am a draper of Bridport. In 1821 I purchased two dozen socks composed of two linings of cloth and India-rubber between them; they were publicly offered for sale.

William Hall sworn. Examined by *Mr. Gurney.*—I am a glover in Wood-street, Cheapside. I had in my shop socks of the description produced by the last witness in 1822; I had small quantities at various times, five, ten, or twelve dozen at a time.

George Green, sen., sworn. Examined by *Mr. Sergeant Talfourd.*—I have been in the habit of making balloons for a great number of years; my first ascent was in 1821. I manufactured miniature balloons before that time. The upper part of a balloon should be flexible. I made it air and water-proof by forming it of a double and treble texture, with a solution of India-rubber. The flexible cement I used was formed entirely of India-rubber, dissolved in oil of turpentine. I used the cement in the seams of the balloon; it was exhibited at the Pantheon. I coated over the surface uniformly, and when the moisture and oil had been sufficiently evaporated, so as to become adhesive, I applied a second coating of the solution in the same way; I then prepared another piece of silk in a similar manner, and united them by pressure. I made balloons from a boy. I believe no person but myself ever succeeded in making a perfect solution with oil of turpentine and India-rubber. Balloons of a small description were publicly exposed for sale in my shop; they were not all made on the same principle. My large

Macintosh et al. v.

balloon was made without stitching, and with the cement I have described. The seams were united by that cement, but there was another substance in it, in order to prepare the surface to receive it, because it did not adhere so well on a smooth surface as upon that which is not smooth. In 1822, I constructed another balloon on the same principle. The description of pipes I used for the purpose of conveying the gas to the balloon were made of silk or linen. This pipe is an imperfect sample; it was made from the remains of the coronation balloon, which was destroyed at sea. The other fragments I used to cover my shoulders with: I used one large one as a gig cover, and I gave several of them to my friends. I did not tell them the manner in which the cement was made, any further than that it was formed of India-rubber. I did not tell them how I formed it; I always said the varnish I used was India-rubber. I do not varnish now with India-rubber; I still use India-rubber for the purpose of uniting the seams together to the parts where the silk is double. No balloon was ever made cemented together before I made one. I never found my experiments of dissolving India-rubber in spirits of turpentine to fail, except on the first trials; latterly I have found them succeed.

Cross-examined by the *Attorney-General.*—My first ascent was in July, 1821, in a balloon manufactured by means of dissolved India-rubber in the way I have stated; I have no specimens made before 1823, except that pipe. I made double balloons by means of India-rubber. I have not mentioned to any one but my son my mode of doing it. I have explained that it was done with India-rubber; the India-rubber varnish renders a single fold impervious to air, but it is not durable so. I have not got any of the other cement made of India-rubber; I have not had occasion to use it for some time. Gum-mastic and India-rubber dissolved in turpentine is the cement, one for a smooth surface and the other for a rough one or a varnish. I have applied the compound cement to balloons often, when it has been torn while filling; I employ the compound cement for the seams. Turpentine is a dear article of late, that is why coal-oil has become an article of commerce more than it otherwise would be.

Re-examined by *Mr. Sergeant Talfourd.*—I have not known anything of coal-oil by that name, till within the

Everington et al.

last twelve years. The varnish at this time is made of India-rubber, but there are other articles to prevent the action of the coal-gas; I could not get coal-oil without waiting a long time for it, I should have been satisfied with three or four pints a week. I have distilled the coal-oil found swimming on the surface of the water in gasometers.

George Green, jun., sworn. Examined by *Mr. Rotch.* — I am son of the last witness. I was acquainted with the solution used by my father in 1820. In making his coronation balloon I assisted in cutting the India-rubber into shreds; the solution was composed of India-rubber and oil of turpentine, and was applied to balloons having a double texture; we applied the cement by means of a brush, and the two surfaces were put together and formed a double substance, and afterwards worked up into balloons. I had a cloak made from the balloon, and wore it when travelling outside of coaches; when asked of what it was composed I believe I have said it was part of a balloon cemented together by India-rubber. The tube produced was used to convey the gas to the balloon; it was formed of the old materials, and the cement was India-rubber dissolved in oil of turpentine with a portion of gum-mastic.

Cross-examined by *Sir W. Follett.*—When an article has been previously varnished, we were obliged to use the compound cement, because the India-rubber cement having the mastic would not adhere to oiled surfaces, it is too smooth. This pipe is made of the compound cement. I have always said the India-rubber was dissolved in oil of turpentine; my father always did so too; I never heard him enter particularly into the way of doing it.

Edward Spencer sworn. Examined by *Mr. Gurney.*— I know the witness Green, and also his son, have seen them cement parts of balloons together. In 1822 he told me that the preparation used was India-rubber dissolved in spirits of turpentine; I have seen him dissolve the India-rubber, and assisted him; I had a part of the balloon given me, but have not used it as a cloak. It was waterproof, here is a part; I have had it by me since then to the present time.

Cross-examined by *Mr. Attorney-General.* — I have never seen gum-mastic used by Mr. Green. I think I

Macintosh et al. v.

have heard him mention it as a composition used in forming the seams and in repairs. I know what coal-oil is, I have distilled some. I have been at gas works, and all that I have ever seen has been a film so difficult to obtain that I could not get any till a fortnight after I wanted it. I swear that for years I have heard Mr. Green the elder explain to a great number of persons how he made the solution of India-rubber.

John Adams sworn. Examined by *Mr. Rotch.*—Mr. Green gave me a cloak made of the coronation balloon; I wore it for about nine years, and it proved air and water tight.

Thomas Hancock, M.D., sworn. Examined by *Mr. Sergeant Talfourd.*—I have been a good deal engaged in botanical researches. I saw waterproof articles exhibited for sale in Demerara in 1812 and 1813. I examined the cloaks and other articles, particularly with a view to ascertain their texture. They appeared to be constructed in the same manner as had been represented to me a year or two before at Rio Para, thus: the milk of the hevea was spread over one piece of cloth, and another texture was laid upon it, and then it was finished; it was dried by being exposed to the sun. It was no secret in Demerara, the articles were exposed openly for sale; I do not think they were very extensively sold in the colonies, as there was and is a prejudice against them.

The Attorney-General in reply, said,—Mr. Macintosh took out his patent in June, 1823, and immediately commenced manufacturing to a large extent, though not so extensively as within the last few years; first in Glasgow, and afterwards in Manchester. He made large quantities for the Government, he had an order for the Ordnance-office to the amount of 500*l.* in 1824. No one appeared as a rival for more than ten years after the patent was taken out, no one questioned his right to a patent, and no other cloaks possessing the qualities described in his specification were exposed for sale. About twelve months ago, the defendants took up the manufacture of the article under pretence that he had bought some man's patent, and they labelled their cloaks *Fanshawe's improved patent India-rubber waterproof cloth.* There is no such patent as Fanshawe's in existence; this is pure invention. If there is such a patent why is it not produced? My Learned Friend says, "We do not like to tell you the

Everington et al.

secret by which we manufacture ours." It is very odd that it should be a secret if it is a patent; I thought my Learned Friend told us that the condition on which a patent was granted, was that the patentee should enroll a full and fair disclosure of the nature of his invention for the benefit of the public. They begin their case by stating what is utterly false: they say they have got a patent, which patent does not exist; and if they begin by stating what is false, they will not be very scrupulous with regard to the means which they employ in getting evidence to support a defence that is based upon falsehood. They could call no one to give any account of the manner in which their article is manufactured, because they knew nobody who would not have said that their process was identically the same as that of Mr. Macintosh's, and therefore they closed their case without venturing to produce such a witness. I know of no species of property, that if it does exist, ought to be more respected than property in a patent. My Learned Friend's first objection is, that the invention is not a fit subject for a patent. My answer to that is, that there is no such plea on the record, no such objection in the enumerations of objections to which, under Lord Brougham's Act, we are entitled. The invention seems very simple, as all things do when they are discovered. The theory of gravitation itself was discovered by Sir Isaac Newton, from seeing an apple fall from a tree; and equally simple was the discovery of Mr. Watt with regard to the steam-engine. The only difficulty he had was advancing one step, and I may truly say that that step changed the history of the world; and it was such a step that Mr. Macintosh took. The process had not been known in this country before, and is therefore a good subject for a patent, and has now become an important article of British commerce. Supposing it to be a fit subject for a patent, my Learned Friend's second objection is, that the specification is insufficient; first, by claiming too much; and secondly, that it does not fairly disclose that which Mr. Macintosh meant. The words of objection on the record are, "*that coal-oil cannot be produced or made directly in making coal-gas, and that coal-oil is too indefinite.*" My Learned Friend tried to prove that there was only a thin film ever found floating on the surface of the water in gas tanks. I have proved that there was produced in a separate state

Macintosh et al. v.

of coal-oil as much as would swim a boat at any time,—that in the metropolis alone there might be obtained from 3,000 to 4,000 gallons per week; and that coal-oil was well and generally known by that name. If a fair and candid judgment be exercised, it will be found that the specification is framed so that it effectually answers its purpose, describes what is the nature of the invention, claims what is new, and disclaims what had been previously done. You are, according to the case of *The King* v. *Arkwright*,[*] to take the title and specification together, and not to take one sentence, one line, or one word, but to look at it as a whole, and to see what is the fair and just interpretation that ought to be put upon it. The specification does not say any flexible cement, but a "flexible cement in manner hereinbefore described." He claims the application of the cement. The second objection is, that we do not sufficiently describe how the oil is obtained, and how it is to be used. This, gentlemen, is no part of our invention; we describe a known solution, because it is the application of that known solution to a variety of fabrics that we claim as our patent. In applying it to tarpaulins it is immaterial whether it smells like otto of roses, or is as offensive as assafœtida. The question is not as to the smell of the article, but whether it is impervious to air or water. In making articles for fine purposes, it is necessary that the oil should undergo purification by distillation, a process known to every tyro. The specification would have been ludicrous if it had described this process. It is not necessary to describe in the specification what is known to all mankind. Our not calling workmen to prove how the solution was made, was because this was not the subject of controversy. It was how the solution was applied, and that has been described by witnesses. But my Learned Friend says we have departed from our specification, and have therefore wholly upset our patent. I say the specification has been strictly and literally pursued down to the present hour. It is immaterial whether we apply the brush with the hand, or by aid of steam-power. If that doctrine of my Learned Friend were to prevail, there is not a valid patent in existence. There is not a specification filed but some improvements are discovered in working out the invention. And is the patentee to renounce these

---

[*] Vol. I., p. 53.

Everington et al.

improvements? or, if he avail himself of them, is he to be taunted with having departed from his specification, and told that he ought to lose his property? The only departure we have made is an abridgment of the labour, and a facility in the manner in which the invention is now applied. The test of the specification is, that the article may be made according to the specification, and several witnesses who merely read the specification, without deriving information from any other quarter, made the article. It was produced before you, and every specimen was proved to be impervious to air and water. The next plea is, that the invention is not new,—that it was publicly known and used before the date of this patent. This point of law was clearly laid down in *Lewis* v. *Marling*,* where it was decided that the use must have been a public use, unless it could be shown affirmatively that the patentee had a knowledge of the subject in an imperfect state from the invention of another person. The patent was for improvements on shearing-machines for shearing or cropping woollen and other cloths; and in the specification, among other things, were claimed "the application of a proper substance fixed on or in the cylinder, A, to brush the surface of the cloth to be shorn," and also "the described method of shearing cloth across, from list to list, by a rotatory cutter." The brush for this purpose was soon found useless: no machines were ever sold with it; on this ground it was contended that too much had been claimed, and, therefore, the patent was void. The other part claimed, the defendants contended, was not new, and proved that a similar machine was in use in New York twenty years ago, and that a specification was sent over to England, in 1811, to one Thompson, residing at Leeds, who employed two engineers to manufacture a machine from it, but this never was finished, in consequence of the disturbances made by the Luddites. The specification was shown to several persons, but the machine was never brought into use. It appeared also, that in 1816, a model of a machine, to shear cloth from list to list, by means of a rotatory cutter, was brought over from America, by one Smith, and he showed it to three or four persons in his manufactory, but no machine was ever made from it, nor was it publicly known to exist, and Smith always used machines manufactured by

---

* Vol. I., p. 478.

Macintosh et al. v

the patentee. It further appeared that many years ago, one Caxon had made a machine to shear from list to list, which was tried by a person called on behalf of the defendants, but he did not think it answered, and soon discontinued the use of it. The defendants contended that this evidence deprived the plaintiffs of the right to a patent, as their invention was not new. *Lord Tenterden* observed, that as the invention of the machine for shearing from list to list by a rotatory cutter, had not been generally used or known in this country, the patentees might be considered the inventors within the meaning of the Statute, 21 James I.; and his Lordship left to the jury the questions, whether it had been generally known, and whether the patent had been infringed by the defendants. The jury found for the plantiffs. An application was made to the Court for a new trial, and *Mr. Justice Bayley* said, if the invention brought from America had been seen by the plaintiff, he could not afterwards have claimed to be the inventor; but if he discovered a certain thing, it was no objection to a claim to a patent, that another also has made the discovery, provided he first introduced it into public use.

Here is no ground to doubt that the plaintiff was the inventor of the machine, and first introduced it into public use. Then there is the case of *Jones* v. *Pearce*,* where still more decided previous using was proved, but the same was abandoned. Upon the principle of these decisions, I hope this case will be decided. Let us now examine what are the proofs brought to show the invention was not new, at the time of the patent being obtained. There is the sock which has been produced; it is composed of two pieces of linen, with a solid piece of India-rubber, placed between; this is not the same as our invention; what we claim is the application of the India-rubber in a state of solution. The witness Green tells you, he used India-rubber dissolved with oil of turpentine, to unite folds of silk, in making his balloons, where it was required to be double; but was it not with the gum-mastic cement that he united pieces of silk, for he says he was not aware that India-rubber alone would effect it, and therefore he used a cement made of India-rubber and gum-mastic; he says he never disclosed his process to any one. He uses a compound cement, and not the pure India-rubber cement,

---

* Vol. I., p. 524.

Errington et al.

In re Westrup & Gibbins' patent.

which is the subject of our patent. Suppose the cement to have been the same, then the publication was not sufficient to invalidate our patent. Suppose the balloon to be exhibited before thousands of spectators, it would have been impossible for them to have discovered whether it was made of one or two folds of silk, or in what manner they were united. The whole evidence of publication is Green's son and the attorney, who contradict what Green himself has sworn. The passage in Humbolt's work proves nothing, even supposing the pure gum was used. My Learned Friend might just as well say that barley and beer are the same thing, that milk and cheese are the same thing, as to say that the milk from the tree is the same as dissolved India-rubber; but all these were experiments, they failed in consequence of the offensive smell. In Johnson's patent there is no joining of two fabrics by dissolved India-rubber, on the contrary, a coat of India-rubber is applied to a single fabric, and the India-rubber covered with flock or dust of cloth, sifted over; and although in Mr. Macintosh's patent, the oil is recommended to be pure, it is not necessary for all purposes where the smell would not be objectionable. Under all the circumstances, I confidently expect your verdict. If you decide the patent is good, there is no doubt of the infringement.

His Lordship commenced summing up, when the jury intimated that they were satisfied, and found for the plaintiffs.

IN RE WESTRUP AND GIBBINS' PATENT.

In the Privy Council, before Lord Lyndhurst, Lord Wynford, Sir Thomas Erskine, and Sir Herbert Jenner.—March 5, 1836.

This was an application for the confirmation of a Patent granted to Messrs. Westrup and Gibbins, on the 24th day of May, 1831, for "Improvements in converting Salt or other Water into pure or fresh Water."*

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—Now know ye, that in compliance with the said proviso, we, the said Thomas Westrup and William Gibbins, do hereby declare that the nature of our said invention, and the manner in which the same is to be performed, are particularly described and ascertained in and by the following description thereof, reference being had to the drawing hereunto annexed, and to the figures and letters marked thereon; that is to say:—

In 10

The petition set forth, that it had been lately discovered by one of the patentees (the other being dead), that one

---

"It is well known that by distillation, water may be separated from impurities held in solution or otherwise mixed therewith; and many attempts have been made to distil sea water, with a view to make the same suitable for cooking, and other purposes; but there has always been found considerable attention necessary for supplying the condensing water to the condenser. Now, the object of our invention or improvements is, to construct the apparatus used in condensing the steam arising from sea or other impure water in such manner, that the condensation shall at all times be going on without attention from any person; and thus, whenever there is a fire in the ship's hearth, and water supplied to the boiler, there will always be a continued distillation going on.

"But in order that our invention may be fully understood and readily carried into effect, we will describe the drawing hereunto annexed, —first observing, that our invention consists in placing the condenser below the water line in ships or vessels, and permitting the water in which such vessels float, to have free and full action on the outer surfaces of the pipes, or other apparatus, used for condensing the steam arising from sea or other impure water.

"In the drawing, fig. 1, represents the section; and,

"Fig. 2, a front view of a ship's hearth constructed in the manner which we consider best adapted to the object of our invention; but such ship's hearth forms no part of our invention, and is only shown with a view clearly to explain the nature and action of our improvements; yet, as this ship's hearth differs in some degree in the arrangement from those in common use, we will proceed to describe the same more fully:—

"In figs. 1, and 2, A, is the boiler for cooking purposes, heated by a separate fire-place, B; the flue, C, of which fire-place passes round the boiler, A, and thence into the chimney or flue, D, of the fire-place or grate, E. F, is a boiler surrounding the boiler, A, and which boiler, F, we call the purifying boiler; it being used only for the purpose of evaporating sea or other impure water, for the purpose of distilling the same, and rendering it suitable for cooking, and other purposes. G, is another boiler placed at the back of the fire in the grate, E, in order to apply as much as possible of the heat from that fire, which would otherwise pass off up the flue or chimney; on the top of the boilers, F, and G, there is a branch steam-pipe, H, leading to a condenser hereafter fully described.

"It will be seen by this arrangement, that when the fire at B, is lighted, the flame, heated air, and smoke will pass through the flue, C, and give off heat to the water contained in the boiler, F, and steam will be continually forming therein and passing off to the condenser; and if a fire be lighted in the grate, B, the heated air, flame, and smoke will give off heat to the boiler, G, and continue to convert the water therein into steam, which will also pass off by the pipe, H, into the condenser. Cocks are to be placed in any convenient positions in the boilers, A, F, G, for the purpose of drawing off the water contained therein. The steam-pipe, H, turns down and passes through the deck or decks, according to the description of vessel in which the apparatus is placed; and such steam-pipe is connected with the condenser, I, which is a

Westrup & Gibbins' patent.

part of the invention had been discovered and known before the date of the patent, but that it had not been

cylindrical vessel containing the coiled pipe, J, into which the steam passes from the pipe, H, and becomes condensed. K, and L, are two pipes connected with the vessel, I, and passing through the ship or vessel, and thus form an inlet and an outlet for the water (in which the ship or vessel floats) to pass into and out of the condenser, I; and such is the nature and action of water, that, as it becomes heated, it rises towards the surface; thus the water coming in at the pipe, K, is brought in contact with the coil of pipe, J, and takes up the heat of the steam and hot water contained therein; and thus such incoming water is caused to rise to the top of the condenser, and pass off at the pipe, L, by which means a constant flow of cold water to the condenser, I, will take place.

"We will here observe, that we do not confine ourselves to the use of a coil of pipe contained in a cylindrical vessel, but other well known arrangements of apparatus may be used for the condenser, provided they be placed in a vessel similar to the vessel, I; such vessel having an inlet and an outlet pipe, K, L, placed so as always to be below the water mark of the ship or vessel as above described.

"Fig. 3, represents another arrangement of condenser, and consists simply of a pipe, I, connected to the steam-pipe, H; such pipe, I, being fixed on the outside of the bow (or in any other convenient place) of the ship or vessel, and passing down towards the ship's bottom, enters through the planking at J, and the condensed water therefrom runs into a cask, or tank placed below for that purpose. By this means, the water in which the ship or vessel floats, will at all times be acting on the condensing-pipe, I, J, and will condense the steam passing from the pipe, H. By placing two or more pipes, I, a larger cooling surface may be obtained, and consequently, a larger quantity of distilled water may be produced.

"Having now described the nature of our invention, and the manner in which the same is performed, we would further add, that the condensing apparatus should be made of such material as is least acted on by sea water, and would have it understood, that we do not confine ourselves to the use of ship's hearths constructed as represented in the drawing, as other arrangements will answer; but we prefer at all times to have a separate boiler for the purpose of producing steam, and not to use the steam from a boiler at the same time in use for cooking.

"And we do hereby declare, that our invention consists:—

"First, in applying a condenser in the manner shown in figs. 1, and 2, such condenser having an inlet and an outlet pipe placed below the water mark as above described; and,

"Secondly, we claim the placing of a pipe or pipes, whether round or otherwise formed, on the outside of a ship or vessel; such pipe or pipes passing below the water line, and thus forming a condenser for the steam or vapour from a boiler, for the purpose of converting sea or other impure water into fresh or pure water, and suitable as such to cooking and other purposes.—In witness, &c.

"THOMAS WESTRUP,
"WILLIAM GIBBINS."

publicly or generally known or used, and therefore the petitioner asked to have the patent confirmed for the whole invention.

Mr. Rotch.—My Lords, I appear for the assignee of the patent in this case, the patentees being Messrs. Westrup and Gibbins, who have assigned it to a person of the name of Wells. And this petition is presented under the second clause of the Act for the purpose of confirming these letters patent, notwithstanding part of the invention had been known before. The invention is an invention for the purifying of sea water.

Lord Lyndhurst.—The purification of sea water is by no means new! Do you mean to say it is new?

Mr. Rotch.—Certainly not. We have the invention which we can put in operation before your Lordships, but it is not necessary.

A bottle of purified water was produced and handed to their Lordships.

Lord Lyndhurst.—This may have come from the next pump for anything that we know to the contrary.

Mr. Rotch.—The patent, as your Lordships will suppose, is not for the mere distillation of sea water; that was perfectly well known before; but it is for the particular mode which is adopted, particularly the refrigerator. The patentees would never have supposed that their patent needed confirmation at all if it had not been for certain singular proceedings which have taken place with a company. The patentee engaged with that company to carry on this process of purifying sea water, and shortly afterwards, in a manner which I need not go further into now, a portion of the directors of this company took up another man's patent; there was a schism amongst them, and each party strove to bring forward their own man; this other man having another invention to purify sea water, a portion of the company, or of the directors, thought his would be better, and in their zeal to prevent the company from purchasing the patent of Mr. Wells, and concluding with him, they discovered an old book in which something was said which, they say, interferes with this patent, and renders it good for nothing.

Lord Lyndhurst.—You have not stated what part it is, is it the pipe going through the side of the vessel into the sea, and then back again into the vessel;—is that the old part?

Westrup & Gibbins' patent.

Mr. Rotch.—That is a part which has been known before. I should explain in the first instance, what is the nature of Mr. Wells' patent. We are the assignees.

Lord Lyndhurst.—The condensation is the only point.

Mr. Rotch.—And that is all we claim. This is supposed to represent the outside of a vessel (*holding up a model*), and the water we will suppose comes up to here; here is a hole, and then another here; this hole communicates with the vessel, which holds the water, in which the worm is which comes from the still.

Lord Lyndhurst.—Does any body oppose this?

Sir Frederick Pollock.—Oh, yes, my Lord! I appear to oppose this application.

Lord Lyndhurst (to *Sir Frederick Pollock*).—Do you oppose it on the ground that the whole is bad?

Sir Frederick Pollock.—No, on the ground that part is old; and that, instead of coming here—

Lord Lyndhurst.—You say there are two clauses in this Act.

Sir Frederick Pollock.—If they claim what they ought not to claim, they are to go to the Attorney-General, and ask for a disclaimer, and then the patent becomes good, provided that is good which is new. Instead of that, they come here for the confirmation of that to which they are really not entitled.

Mr. Rotch.—That is my friend's case very shortly put: I cannot put mine so shortly.

Lord Lyndhurst (to *Mr. Rotch*).—You must make out this kind of case, and as strong as this: that if you had claimed for that which is old, and for that only, we should have confirmed your patent. You must make out a case as strong as that.

Mr. Rotch.—I think this amounts to very nearly that.

Lord Lyndhurst.—This Act of Parliament was not meant to apply to every day cases.

Lord Wynford.—I should like to hear the case where you would be entitled to a confirmation of a patent for that which was known before.

Lord Lyndhurst.—This clause was altered after the Act left the House of Lords. Now you would have a patent against the real inventor if we confirmed it! I believe, when the clause was in the House of Lords, the right of the real inventor was preserved. Somebody struck it out, the Attorney-General being confined by illness.

In re

Mr. Rotch.—As an advocate here to-day, before your Lordships, I am not to contend for the expediency of the Act: but the Act exists. I merely represent here my client, who comes forward to take advantage of an existing Act of Parliament. If the Act is wrong, no doubt it will be altered: we are now in the early stage of its working, and I must say, if ever there be a case which will apply, this really is one.

The Attorney-General.—There must have been some indisposition in the law Lords, in the House of Lords, when the amendments went back, and were approved of by their Lordships.

Lord Lyndhurst.—I presume they relied very much on the accuracy of the other House of Parliament. I was not one of the conference.

Lord Wynford.—What is the proportion of the new and the old in this patent?

Mr. Rotch.—Almost the whole. And I think I shall be able to show your Lordships, when we have done the discussion on the merits,—I think I shall be able, when I come to my own case, to convince your Lordships this is exactly one of those cases intended to be remedied by the Act.

Lord Lyndhurst.—You had better go on.

Mr. Rotch.—The whole of the patent being new, except one small connecting link, which certainly is old, and I am obliged to say so; but in order to avail myself of my invention, I must make use of that connecting link—that trifle which these parties opposing the patent are going to bring forward.

The Rt. Hon. Sir Thomas Erskine.—You say, although it was old it was not generally used, and the inventor of the rest did not know that fact.

Mr. Rotch.—That is distinctly sworn, and the connecting link which is made use of in the former patent I am obliged to make use of in this. This is one of those species of cases where parties take advantage of a thing which they do not mean to claim as part of their patent, and which they introduce as a pipe leading from one engine to another.—I must have the same, and therefore they say this is old.

Lord Wynford.—But the old part is claimed in your patent?

Lord Lyndhurst.—I suppose sea water has always been

Westrup & Gibbins' patent.

distilled in the way all other things have been distilled, namely, by evaporation and condensation.

Mr. Rotch.—Yes.

Lord Lyndhurst.—Your invention consists of a particular mode of doing that, namely, by water coming in from the sea, ascending and going out to the sea again, so as to have a continual circulation of cold water.

Mr. Rotch.—Yes.

Lord Lyndhurst.—The second part of the patent is, the pipe goes out at the side of the vessel—it comes in at a lower point, and comes always in contact with the cold sea-water, does it not?

Mr. Rotch.—It does do so; but that is no part of the patent.

Lord Lyndhurst.—Yes, that is the second part of your patent; it is another mode of condensing, that is all.

Mr. Rotch.—No, my Lord. And I should observe this is the side of the vessel immersed in water above both these holes—the cold water can get into both these holes—it falls into this tub containing the worm, and the tub and the water in it is wholly independent of the worm; the worm contains the steam which, condensed, becomes the water, and then the steam from the sea-water, being condensed in this worm, is the purified water.

Sir Frederick Pollock.—Perhaps you will allow me to hand up to your Lordships the drawing, or a copy of it, from the Patent Office.

The Rt. Hon. Sir Thomas Erskine.—We have copies.

Lord Lyndhurst.—As I understand, this is the part that is old. (Referring to a portion on the drawing where a single pipe from the boiler passed over the bow of the vessel under the water and again into the vessel.)

Mr. Rotch.—That is a connecting pipe.

Lord Lyndhurst.—I thought the steam came down this pipe, and was condensed in consequence of its perpetually coming in contact with the sea. The steam comes down and being constantly in contact with the sea it is condensed—what can be more simple than that? (To *Sir Frederick Pollock*) You have not a patent for that, have you?

Sir Frederick Pollock.—No, my Lord.

Lord Lyndhurst.—The other mode, constituting the first claim, is very ingenious; it is similar to the ordinary application of circulating hot water to heat rooms.

Jn 10

Mr. Rotch.—That part of the patent which causes circulation by natural principles is new, but they say that the pipe over the bow is old. Now the only knowledge we have of this pipe over the bow——

Lord Lyndhurst.—Hand in your original affidavit, stating you did not know of this.

Mr. Rotch.—We find in a book published in 1670, which those who are now contesting this patent refer us to as a proof it was invented at that time,—we find a letter from a learned French gentleman, concerning the way of making sea-water sweet—this book is called "Philosophical Transactions." But there is nothing in that which leads one to suppose that there was a pipe over the bow.

The Rt. Hon. Sir Thomas Erskine.—The pipe having passed out of the ship, how would the water come in again if there was not a pipe into the ship?

Mr. Rotch.—By letting the pipe pass through a vessel of water instead.

Lord Lyndhurst.—Is not that the same thing as the worm? The worm may be straight or crooked.

Mr. Rotch.—The water of the sea performs that part, the pipe is a substitute for the worm. He may claim it for the worm.

Lord Wynford.—Why do you not disclaim the second part of the patent? If you give up that there is an end of the case, they wont resist that; you want to get a confirmation of a patent for that which you admit is not new. I remember, and my Noble Friend opposite remembers, the case where a man was deprived of a most valuable patent because there happened to be an old printed book where the same thing was described.

Mr. Rotch.—Then what is the use of the Act of Parliament? I thought this Act of Parliament's object was, that the patentee should not be affected by a person having merely suggested a thing might be done, without ever bringing it into use, or shewing the exact mode in which it might be done. It is merely a general idea, that no workman could set to work and make this; every one would make it in a different way.

Lord Lyndhurst.—Have not the public a right to that?

Mr. Rotch.—I think not under this Act; in every

Westrup & Gibbins' Patent.

country almost but this, the *nonuser* of a patent makes it fail; there is a clause generally saying, unless the patent be used within two or three years the patent granted shall be void; that is, the public shall have the use of the thing. In the book called the "Age of Inventions," you will hardly find anything that is not glanced at in some way or other. The object of this was, if the thing is not put into use; if it shall be made appear to his Majesty's Privy Council, and they shall be satisfied such patentee believed himself to be the first and original inventor, that a person may not come and say, "I shall shut my eyes against every thing that has been done before." Those words were put in expressly to prevent that being done.

Lord Lyndhurst.—Is this your only affidavit, the affidavit of Mr. William Gibbins?

Mr. Rotch.—Yes.

Lord Lyndhurst.—I can hardly think that affidavit sufficient, you do not point to this with sufficient precision in your affidavit.

Mr. Rotch.—I have him here to be examined.

Sir Frederick Pollock.—If my friend will excuse me, I have in my hand precise copies of two specifications, one of the year 1806, and the other of the year 1809, enrolled in the Patent Office, which every subject in this kingdom is bound to know. It will not be necessary for me to dispute this on Mr. Hanton's suggestion made in a book 200 years ago; but I call my friend's attention just to these simple facts:—On the 29th of July, 1806, a patent was granted to a person of the name of Lamb. I have a specification, a stamped and examined copy, and these are the words: "I, the said John Lamb, do declare that from frequent experiments since the 1st day of January, 1803, in the operation of the aforesaid machine or machinery, at sea and on land, the great utility consisteth in confining the whole of the heat, arising from the fuel consumed, to the purposes of cooking, and also to extract fresh water from salt water for the ship's use, the consumption of fuel will be lessened and a greater effect produced than in the usual mode, whether the condensation be in a vessel of the kind or shape above mentioned"—

Lord Lyndhurst.—What is that above mentioned?

Sir Frederick Pollock.—That is not so material, "or

In re

by passing along in pipes or tubes, in trunks filled with cold sea-water or in part under the surface of the sea, I consider it as my improvement or invention, and on the principles I have here adopted."

Lord Lyndhurst.—That is in 1806.

Sir Frederick Pollock.—Yes, my Lord, and in 1809, a gentleman better known for his talent in the law than his connexion with these sort of improvements, Mr. John Frederick Archbold, who has published the practice of such Courts, and some other books on evidence,—he took out a patent in 1809, for the invention or method of converting salt or sea water into fresh water, both on land and on board of ship at sea, and there are these words in his specification: "for the purpose of condensing on board of ship, the tube containing the steam to be condensed may pass through the ship, and along any part of the outside of it which lies immediately in the water, and again entering the ship it discharges the condensed matter into any vessel which may be designed for its reception." We say these two cases are precisely this patent now sought to be confirmed. It is very hard if after this patent of 1806, and this of 1809, they can come here——

Lord Lyndhurst.—I do not think this clause of the Act was ever intended to apply to the case where the patentees choose to shut their eyes, and when they might have gone to the Patent Office and seen this at once.

Mr. Rotch.—If your Lordship will allow me to complete my case. I did not know how I should be able to prove the identity of the two inventions—my friend has now relieved me from it. If I fail to show the case stated by my friend is that which entitles me, and is the only one which could entitle me to the benefit of this Act, I cannot stand before your Lordships. If your Lordships will allow me to submit my view of the meaning and intent of the Act which, I understand, is passed for the express purpose of meeting this very case. In the first place it must be admitted they were old.

Act never intended to confirm patents adversely to the ights of former patentees

Lord Lyndhurst.—The Act never could be intended to apply to a case of this description, as it strikes me—where *A* takes out a patent for the same thing—not knowing of the former patent, that the subsequent patentee has a right to come to the Court to apply to have the exclusive benefit of the invention adversely to the

Westrup & Gibbins' patent.

rights and interests of the former patentee. This must have meant to apply to a very different case.

Mr. Rotch.—Suppose that both parties are going to work the patent; but if it is thirty years ago, and those parties are not going to carry it into practice—then what is the meaning of the words in this Act? The Act of Parliament says, and perhaps your Lordship will favour me, as this is a new practice altogether here, by allowing me to read the clause, and commenting on it as I go along; the clause is, "And be it enacted, any person, a patentee, or his assigns, who shall discover"—

Lord Lyndhurst.—You are aware it is discretionary with us, particularly when you have another remedy; you may apply to the Attorney-General for a disclaimer.

Confirmation discretionary with P.C.

Mr. Rotch.—If this remedy is open, I would rather adopt it. Really it is important to know how far this Act is to be entertained. The Act of Parliament is this—I wish to call the attention of your Lordships to one or two words of the clause,—"that if the patentee or his assigns shall discover that some other person had, unknown to such patentee, invented or used the same, or some part thereof, before the date of such letters patent, it shall and may be lawful for such patentee, or his assigns, to petition his Majesty in Council, to confirm the said letters patent, or to grant new letters patent, the matter of which petition shall be heard before the Judicial Committee of the Privy Council, and such Committee, upon examining the said matter, and being satisfied that such patentee believed himself to be the first and original inventor." That is the first condition; "and being satisfied that such invention, or part thereof, had not been publicly or generally used before the date of such first letters patent, may report to His Majesty" so and so. If the Act of Parliament had said, and "not been publicly and generally known," then the whole of my argument would have fallen to the ground, but the Act of Parliament avoids that, for the special purpose, as I believe.

Lord Lyndhurst.—You are joint patentees, and one of the patentees is dead; the patentee, who is alive, makes an affidavit: how are we to be satisfied the patentee who is dead, had not seen this very specification?

Mr. Rotch.—That is another point. It may be a point of difficulty; "being satisfied that such a patentee

In re

believed himself to be the first and original inventor, and being satisfied that such invention, or part thereof, had not been publicly or generally used." I believe it is this: I am sure some of the cases have shewn constantly that patentees are for ever liable to this; when they bring an action for the infringement of their patent, if it is a North of England patent, some man from the West of England springs up and says, "I have done this before." It is to provide against that surprise to patentees, persons coming forward and swearing, "I have done the same thing before;"—it is to prevent that, and if the thing has not been used by the public, the public have no injury from a patent being granted. If a man invents a thing, and he cannot use it, and never avails himself of it, and the public do not know it, I apprehend this clause was to provide against that case, as the words of the Act are, they must be publicly and generally used.

Lord Wynford.—Does your affidavit state he did not know it?

Lord Lyndhurst.—The affidavit is the most general affidavit that can be. The affidavit ought to have been pointed to this part of the patent;—the affidavit is an echo of the original one, that they believed themselves the original inventors.

Mr. Rotch.—I have one of the original inventors here. These papers were put into my hand this morning only. I felt directly this affidavit was not sufficiently strong, and I have required the attendance of the parties; one is dead, the other party is here. I meant to examine him *vivâ voce* to that point.

Lord Wynford.—An affidavit is produced which is insufficient. The Court intimate they are not satisfied with that. I do not mean to make the observation as to that particular gentleman: we must be guided by general rules; but any party might come and supply a fact that presses on the Court.

Mr. Rotch.—That would be extremely dangerous, and an improper practice.

Lord Wynford.—I apprehend the object of this clause is, that if there are any very minute portions which have been used, and he swears that he did not know it, a very trifling thing, amounting to nothing, in that case the Court may confirm it.

Lord Lyndhurst.—This is a case in which the Act of

Westrup & Gibbins' patent.

Parliament leaves a discretion in the Judicial Committee, and I think it is impossible for us, sitting and hearing this case to say it is a case in which we ought to exercise that discretion to advise the Crown to confirm the patent. You have your remedy; you may disclaim it, if the Attorney-General thinks proper to give you relief. The Attorney-General may be applied to for that purpose.

Lord Wynford.—That, perhaps, might be a ground for coming again, if you were dissatisfied with that; you would come and say, "Confirm the patent, I cannot have relief under the other branch of the Act of Parliament."

Mr. Rotch.—I see nothing in the Act which drives us to go and seek a remedy which we do not like.

Lord Lyndhurst.—It is very difficult to lay down any precise or general rule to govern our discretion in a case of this description. I think we should not be justified in recommending the Crown in this case.

difficult to govern discretion of P.C. by gen
rules -

Sir Frederick Pollock.—Under the 15th section, which authorizes your Lordships to sit in these cases, the costs of the application are in the power of the Court. We are brought here to prevent the confirmation of a patent.

Lord Lyndhurst.—You do not represent any person having a patent.

Sir Frederick Pollock.—We shew there was Mr. Archbold's patent, and Dr. Lamb's before this, and the public were actually put in possession of these, as much as if it was an Act of Parliament. The subjects of this realm are bound to know of these patents.

Lord Wynford.—In what character do you come?

Sir Frederick Pollock.—We have filed our objections.

Lord Wynford.—You come, having used the patent?

Sir Frederick Pollock.—We come here, having an interest in the patent. We have an interest in some other patent which would be interfered with. My Lords, my ground is this,—that every body is bound to know the specifications that are enrolled at the Patent Office, they are as much matters of record, and to be as much treated, and known as Acts of Parliament, and we have filed our objections, which objections having been read, they still come here.

Lord Lyndhurst.—I have read your objections, and if

In re

after that they choose to come, it is for them to take the consequences. My opinion on the subject of costs is this, if a party entitled to oppose does come and oppose, and opposes successfully, he ought to have his costs; if we do not give costs we shall discourage persons coming to protect the interests of the public. We have the power to give costs in any matter referred to us, and sitting here as a Judicial Committee, we can give costs under the general Act—not under the patent Act—it was not necessary.

Mr. Rotch.—On the subject of costs, my Lords, I hope your Lordships will allow me to go into the particular situation of these parties, because the parties who are appearing now are three out of six Directors who, having agreed with Mr. Wells to take his patent——

Lord Lyndhurst.—Have we any affidavit of all this?

Mr. Rotch.—I want to call witnesses, they are here, the Directors themselves are here to say the Company are averse to the proceedings of these three Directors who are opposing it.

Lord Lyndhurst.—We cannot allow evidence after the close of the case as to costs, we do not allow evidence to be heard as to costs when the case is over, you know.

Lord Wynford.—Here you have the objections, and you knew the objections.

Mr. Rotch.—The objections are merely as to the novelty. Unless it was proved to be old we could not come here at all.

The Rt. Hon. Sir Thomas Erskine.—It is not merely as to the novelty, but it is to notoriety.

Mr. Rotch.—They have not proved that.

The Rt. Hon. Sir Thomas Erskine.—I consider the two patents as proof of that.

Mr. Rotch.—They have stated the thing to be publicly used.

The Rt. Hon. Sir Thomas Erskine.—Notoriety and publicly used are two different things; was publicly known.

Mr. Rotch.—The second objection is, because a patent was granted for an invention substantially the same thirty years ago, and was generally used in England, and of that they have given no evidence; if they fail in their plea, surely the costs——

Lord Lyndhurst.—One of their objections is, "because a patent was granted for an invention substantially

Westrup & Gibbins' patent.

Crofts v. Peach et al.

the same about thirty years since." It points your attention to a patent having been obtained; you, by searching at the Patent Office, could have got a copy of that patent, and at the time you took out your own patent; you cannot avail yourself of your own supineness. There, again, is the objection: "the principal part of the said invention of the said Thomas Westrup and William Gibbins, *videlicet*, that which is secondly claimed in the specification, signed by the said Thomas Westrup, had been discovered more than 100 years before, and had been published in several books."

Mr. Rotch.—They do not show that, they do show the use of it.

Lord Wynford.—You yourself read from the book.

Lord Lyndhurst.—I think you might have found out the patent; there were two patents. It is an experiment.

Mr. Rotch.—Do you call it an experiment?

Lord Lyndhurst.—I do indeed.

Mr. Rotch.—The Act was an experiment.

Lord Lyndhurst.—This was an experiment to see how far the Courts will go. I know the Noble and Learned Lord, who was the patron of this Act, and under whose particular direction it was drawn, never meant that a loose construction should be given to it; to bring a case within the Act so as to justify the interposition of the Judicial Committee, he always considered you must make out some especial and strong case.

The petition must be dismissed with costs.

CROFTS *v.* PEACH AND ANOTHER.

In the Court of Common Pleas, before Lord Chief Justice Tindal, Mr. Justice Park, Mr. Justice Vaughan, and Mr. Justice Bosanquet.—Easter Term, 1836.

An action has been brought by the plaintiff against the defendants for infringing his patent, for means of making lace by machinery. *Mr. Wightman*, on behalf of the defendants, applied to the Court to direct the plaintiff to produce and hand over to the defendants specimens of lace made by the plaintiff's machinery. The reasons given for this application were that the plaintiff's specification had only been enrolled a few months, and the

Crofts v. Peach et al.

Ex-parte Perring

manufacture according thereto was not known on the market, and the defendants were desirous of showing, amongst other things, that the invention was not new, to do this it was necessary to have specimens of the plaintiff's manufacture for the defendants' witnesses to examine, and it was also desirable that the defendants' witnesses should compare the manufacture claimed by the plaintiff under his patent, with the lace made and sold by the defendants, in order to ascertain whether the manufactures were the same.

Lord Chief Justice Tindal.—The effect of this application is to ascertain the evidence which the plaintiff will produce at the trial. The defendants may plead that the invention is not new, if that be the fact. The specification gives the necessary information.

The other Judges concurred.

Rule refused.

EX-PARTE PERRING.

In the Court of King's Bench, before Lord Chief Justice Denman, Mr. Justice Littledale, Mr. Justice Patteson, and Mr. Justice Coleridge.—May 5, 1836.

LETTERS patent were granted to Mr. Perring on the 6th October, 1830, for the manufacture of anchors according to an invention made by him. The letters patent contained the usual clause for controlling the manner in which His Majesty's service should be supplied, which is as follows:—

"And also if the said Richard Perring, his executors, administrators, or assigns, shall not supply, or cause to be supplied for Our Service, all such articles of the said invention as he or they shall be required to supply in such manner, at such times, and at and upon such reasonable prices and terms as shall be settled for that purpose by the Commissioners for executing the office of our High Admiral of our United Kingdom of Great Britain and Ireland, or by the Commissioners for executing the office of Lord High Admiral of our United Kingdom of Great Britain and Ireland, that these our letters patent, and all liberties and advantages whatsoever hereby granted, shall utterly cease, determine, and become void, anything hereinbefore contained to the contrary thereof in anywise notwithstanding."

Ex-parte Perry.

Few v. Guppy.

This was an application on the part of the patentee by *Sir W. W. Follett*, for a *mandamus* commanding the Lords of the Treasury to settle the terms and prices on which His Majesty's service should be permitted to use anchors according to the patent. The affidavit in support of the application stated that the Admiralty had had anchors constructed according to the patent, and had refused to give the patentee adequate remuneration. The Learned Gentleman contended that the patent must be construed to impose a duty on the Lords of the Admiralty, and that they were not to use the invention without making an arrangement with the patentee as contemplated by the letters patent.

Lord Chief Justice Denman.—It is clear that this application is not warranted by the terms of the patent. The defendant has supplied nothing.

Mr. Justice Littledale.—The claim seems to be in the nature of a *quantum meruit* for the use of the patent. We cannot grant the *mandamus.*

Mr. Justice Patteson.—The claim, if valid, must be founded on a contract. But we cannot grant a *mandamus* to a public board, ordering them to carry a contract into effect.

Mr. Justice Coleridge concurred.—Rule refused.*

FEW *v.* GUPPY.

In the Court of Chancery.—November 10, 1820.

The bill originally filed in the name of Charles Few, in 1827, set forth that letters patent were granted to Edward Charles Howard, on the 31st October, 1812, and other letters patent on the 20th November, 1813, and also further letters patent on the 4th August, 1814, all relating to the manufacture and refining of sugar. The bill also set forth that by certain deeds between the parties therein mentioned the several letters patent became vested in Charles Few, in trust for E. C. Howard, in respect to two-fifth parts of all benefit and advantages produced from the said letters patent, and for T. Hodgson, for the other three-fifth parts of all benefit and

---

* It is suggested that the proper course would have been to have proceeded against the users for infringement.—*Walker v. Congreve*, Vol. i., p. 356.—W. C.

Few v.

advantages according to the terms of the deed of trust. The bill also set forth that Samuel Guppy, and Thomas Richard Guppy, in 1826, took the business of Messrs. George, sugar-refiners of Bristol, who previous to their bankruptcy, had been carrying on their business by the aid of the patent inventions of Mr. Howard, under license from the said plaintiff, Charles Few. The bill set forth various letters and communications which had passed between the defendants and the plaintiff, setting forth that the defendants were assignees of the license granted to the Messrs. George, and the correspondence also shewed that the plaintiff claimed from the defendants patent rent, not only for the time they had been conducting the manufacture after the bankruptcy of the Messrs. George, but also for money due for working under the license by Messrs. George before their bankruptcy. The bill prayed that an account might be taken of all sugars made and sold under the license and of the selling prices, and that the defendants might be ordered to pay over the profits of such working, after making reasonable deductions for expenses, to the plaintiff; and it further prayed an injunction to restrain the defendants from working according to such letters patent. The answer of the defendants set forth that the patents were not good and valid in law, and that no good and sufficient specification had been enrolled according to the several provisions in the said letters patent, and as a further defence, the answer set forth a deed of assignment between the said defendants and the assignees of Messrs. George, of the premises and works of the said Messrs. George, under which the defendants claimed that they had a right to ask for, and have assigned to them, the license granted by the plaintiff to Messrs. George, and that having been advised that the patents were invalid, they had not heretofore availed themselves of the right of obtaining such assignment of the said license, the defendants admitted that they had been working according to the processes and machinery claimed by the patents of E. C. Howard, and they insisted that they had a right to do so without rendering any account for the same. The answer also stated that the defendants intended to continue the working, unless restrained by injunction, but submitted that they had a right to work as they had done by reason of the invalidity of

Guppy

the patents. Exceptions having been made to this answer, the defendants put in a further answer, showing how much sugar they had made according to the processes complained of, and stated that owing to the extent and complexity of their business they could not show how much profit they had made on the sugar made by that particular mode of manufacture. The bill, which originally was filed only in the name of Charles Few, was subsequently amended, and the persons beneficially interested were made joint plaintiffs with Mr. Few. By the further answer of the defendants they stated that the inventions were not fully or properly specified, and that the patents were invalid, and also that they had lately ceased working the manufacture according to the patent; at the same time claimed to resume working, if hereafter they thought it desirable so to do; and said, as a further defence, that they were advised, and believed that each of the patents had been assigned or were in trust for more than five persons, contrary to the proviso in each of the said letters patent, and that the patents were clearly rendered invalid. One of the plaintiffs, Julia Howard, having been married, and another of the plaintiffs having had another child born, a bill of revivor and supplement was filed. No evidence was given on either side. The case having been argued, His Honour the Master of the Rolls made a decree retaining the bill for three years, with liberty for the plaintiff C. Few to bring an action or actions at law, against the defendants Messrs. Guppy, touching the matters in question. That the defendants should at the trial of such action or actions admit that C. Few was assignee of the letters patent, and that they had used the processes purporting to be claimed under such letters patent, and that the plaintiff C. Few should produce at the trial the several deeds in the pleadings mentioned, and admit the execution thereof. And should the plaintiff C. Few fail to proceed to trial, the bill to stand dismissed with costs, otherwise the costs were reserved. Both parties were to have liberty to apply.

The plaintiff C. Few brought an action in the Court of King's Bench against the Messrs. Guppy for unlawfully using the inventions secured by the said letters patent without license.

In this state of the proceedings the Messrs. Guppy filed

Few v.

a bill of discovery against the said C. Few, alleging that if the deed of trust, and assignment were fully set out to the Court, and a full discovery made of the trusts and matters contained, it would show that the patents were rendered void by the same being held in trust for more than five persons, and the bill further set forth that the said C. Few, and also the said E. C. Howard, had made various other assignments which divided the rights and privileges thereby granted into and amongst more than five persons, and contrary to the conditions of the said letters patent, which if fully brought before the Court would show that the patents were bad in law; and that for various considerations and payments the said C. Few had granted various licenses subject to various conditions, and had received money therefrom of several persons exceeding the number of five, by which the patents and each of them were held and divided amongst more than five persons entitled to divide the interests and advantages arising from the said letters patent and each of them, by which the said patents were rendered void. The bill prayed that the said C. Few should give answer and discovery to all matters mentioned in the bill, and a schedule of all grants and deeds, and all letters and papers relating thereto, which the said Messrs. Guppy contended would be a full and complete answer and defence to the proceedings taken against them by the said C. Few, and that without such answer, deeds, and documents, the said Messrs. Guppy would be unable to make a defence. The bill also prayed [illegible] all
books and accounts and memoranda, in any way [illegible]ing
to the said letters patent, sh[illegible] be set out and d[illegible] or
scheduled. The answer of t[illegible]id C. Few set o[illegible]th
the deeds of assignment an[illegible]t, dated, 26th [illegible]r,
1816, and 30th May, 1822 [illegible]e moneys to [illegible]d
by the Duke of Norfolk, t[illegible]l of Surrey [illegible]es
Weld, should be held by t[illegible] The answ[illegible]at
the deeds were contrary t[illegible]aid letter[illegible]and
denied that the said C. F[illegible] the said [illegible]ard
had [illegible] any assignment [illegible]sfer, to t[illegible]ge or
belie[illegible] said C. Few [illegible] was in [illegible]trary
to the [illegible]g and inte[illegible] said [illegible]; and
that t[illegible] letters p[illegible]e not [illegible] than
five pe[illegible]nd that [illegible] had [illegible]d other
than by [illegible]ls and [illegible]ts [illegible]swer;
and the [illegible]mb[illegible]e held

Guppy.

in trust for more than five persons. The said C. Few admitted that he had granted several licenses in writing to various persons to use the inventions secured by the said letters patent, such license being subject to certain conditions and the schedule contained a copy of such licenses. The answer admitted that the said C. Few was in possession of a book containing the names of all licensees, and admitted the possession of various deeds, books, and letters, and memoranda, and entries in writing. It admitted that the letters had accumulated since 1812, and were of the most varied nature, and related to various experiments; and that such letters and entries also related to various matters separate and distinct from the inventions for which the said letters patent were taken, and that for such reason the said C. Few was unable to set forth a true schedule thereof, and that many of these letters and documents came into his and his partner's hands as the solicitor and solicitors of the parties interested, and therefore he submitted that he ought not to be called on to produce such documents or letters, or even set forth a list thereof. The answer also stated that he was, and had at all times been, ready and willing to produce and admit the execution of the various deeds of assignment, and also the terms and conditions of the various licenses granted under the said letters patent, and also the names of all persons to whom such licenses were granted. In a further answer the said C. Few set out all account-books, accounts, letters, copies, and extracts of entries.

A motion was made on behalf of the Messrs. Guppy to th[illegible]hancellor for the production of all the deeds ar[illegible]ts admitted by the schedules of the various an[illegible]bjection was made to the production of the de[illegible]nts, and licenses, and his Honour held that no[illegible]nents in which other persons might be inte[illegible] as clients or *cestui que trusts* of Mr. C. Few [illegible] produced. Against this an appeal was mad[illegible]Ch[illegible]llor (*Lyndhurst*), and he directed that [illegible]hich related to the assignments and l[illegible]uced, since the bill only related to the [illegible]nses.

Me[illegible]at the original cause might be re-hea[illegible]ions were given to produce at the tri[illegible]uments other than the several deeds [illegible]e pleadings mentioned, and did

Few v.

a bill of discovery against the said C. Few, alleging that if the deed of trust, and assignment were fully set out to the Court, and a full discovery made of the trusts and matters contained, it would show that the patents were rendered void by the same being held in trust for more than five persons, and the bill further set forth that the said C. Few, and also the said E. C. Howard, had made various other assignments which divided the rights and privileges thereby granted into and amongst more than five persons, and contrary to the conditions of the said letters patent, which if fully brought before the Court would show that the patents were bad in law; and that for various considerations and payments the said C. Few had granted various licenses subject to various conditions, and had received money therefrom of several persons exceeding the number of five, by which the patents and each of them were held and divided amongst more than five persons entitled to divide the interests and advantages arising from the said letters patent and each of them, by which the said patents were rendered void. The bill prayed that the said C. Few should give answer and discovery to all matters mentioned in the bill, and a schedule of all grants and deeds, and all letters and papers relating thereto, which the said Messrs. Guppy contended would be a full and complete answer and defence to the proceedings taken against them by the said C. Few, and that without such answer, deeds, and documents, the said Messrs. Guppy would be unable to make a defence. The bill also prayed that all books and accounts and memoranda, in any way relating to the said letters patent, should be set out and disclosed or scheduled. The answer of the said C. Few set out at length the deeds of assignment and trust, dated, 26th September, 1816, and 30th May, 1822. The moneys to be received by the Duke of Norfolk, the Earl of Surrey, and James Weld, should be held by those. The answer denied that the deeds were contrary to the said letters patent, and denied that the said C. Few or the said E. C. Howard had made any assignment or transfer, to the knowledge or belief of the said C. Few, which was in any way contrary to the meaning and intent of the said letters patent; and that the said letters patent were not held by more than five persons, and that no trusts had been declared other than by the deeds and assignments set out in the answer; and the answer submitted whether the patents were held

Guppy.

in trust for more than five persons. The said C. Few admitted that he had granted several licenses in writing to various persons to use the inventions secured by the said letters patent, such license being subject to certain conditions and the schedule contained a copy of such licenses. The answer admitted that the said C. Few was in possession of a book containing the names of all licensees, and admitted the possession of various deeds, books, and letters, and memoranda, and entries in writing. It admitted that the letters had accumulated since 1812, and were of the most varied nature, and related to various experiments; and that such letters and entries also related to various matters separate and distinct from the inventions for which the said letters patent were taken, and that for such reason the said C. Few was unable to set forth a true schedule thereof, and that many of these letters and documents came into his and his partner's hands as the solicitor and solicitors of the parties interested, and therefore he submitted that he ought not to be called on to produce such documents or letters, or even set forth a list thereof. The answer also stated that he was, and had at all times been, ready and willing to produce and admit the execution of the various deeds of assignment, and also the terms and conditions of the various licenses granted under the said letters patent, and also the names of all persons to whom such licenses were granted. In a further answer the said C. Few set out all account-books, accounts, letters, copies, and extracts of entries.

A motion was made on behalf of the Messrs. Guppy to the Vice-Chancellor for the production of all the deeds and documents admitted by the schedules of the various answers; no objection was made to the production of the deeds, agreements, and licenses, and his Honour held that no other documents in which other persons might be interested, either as clients or *cestui que trusts* of Mr. C. Few, ought to be produced. Against this an appeal was made to the Lord-Chancellor (*Lyndhurst*), and he directed that all those documents which related to the assignments and licenses should be produced, since the bill only related to the assignments and licenses.

Messrs. Guppy prayed that the original cause might be re-heard, because no directions were given to produce at the trial any deeds and documents other than the several deeds and documents in the pleadings mentioned, and did

Few v.

not secure a full discovery, and did not give the said Messrs. Guppy leave to file such bill or bills as they might be advised for compelling discovery. The cause was re-heard, and several applications made to the Court against the decision of the master.

The Messrs. Guppy then applied to the Lord-Chancellor (*Cottenham*) to vary his order with a view to direct the production of certain other documents, or that Messrs. Guppy might be permitted to file a supplemental bill of discovery against Mr. C. Few, for the production of documents, as they might be advised, to aid them in making a defence to the action. On the hearing of this motion, his Lordship said:—It is quite obvious, that, if a plaintiff comes and asks discovery as to one particular point, and obtains all the documents relating to that point, he cannot have a discovery as to all other points to which any documents in the possession of the defendant may happen to relate. I entirely agree with *Lord Lyndhurst*, in thinking that the bill of discovery asks for no further discovery than as respects the assignments and the licenses. I think that he granted all the discovery, which, according to the frame of the bill, could be given. The question is simply upon the second part of the notice of motion. I have read the bill of discovery, and I am of opinion that it does not go to the whole issue in the cause. The defendants having filed a bill for part of the discovery, and the time having elapsed within which that bill could have been amended, the question is whether they can file another bill of discovery. The first part of the motion having been disposed of, the case is as short as possible. The bill having been filed by a patentee, praying the protection of the Court against an alleged infringement of his patents, the defendants, by their answers, put in issue his title to the patents, alleging that they were originally invalid, and also by subsequent transactions that they have become void. The cause coming on for hearing, the Court takes the course which it is very common to take, namely, it retains the bill for a certain period, giving the plaintiff liberty to bring an action. If the Court had thought that the validity of the patents was not in issue, the decree would have compelled the defendants to admit their validity, but the whole matter being in issue, the decree is in conformity to that state of circumstances; and in the action, the defendant would be entitled to impeach the original

Guppy.

validity of the patents, and also to impeach their continuing validity, by showing that subsequent acts had made them void. It is quite immaterial to my present view of the case, whether, after the Court has directed or given liberty to bring an action, with certain directions as to the admissions to be made, and the documents to be produced upon the trial of that action, the defendant can, without leave of the Court, file a bill for a discovery in aid of the defence of the action; because in this case, the defendants have adopted that course, and the objection has not been taken by the plaintiff, and the Court has acted upon the bill of discovery, by directing the production of certain documents. The bill of discovery is confined to the alleged forfeiture of the patents by subsequent dealings. In the answers to that bill the plaintiff discovers a great variety of documents, some of which relate to subsequent transactions, and some of which may or may not be material, but which the defendants at law think may be material, with reference to the first part of their case. They failed in obtaining the production of the last-mentioned documents, because the bill is limited in its language to the subsequent transactions. *Lord Lyndhurst* refused, and I think very properly, to order their production; and the sole question is, whether under these circumstances, this not being a case in which the trial of the action can be delayed, this Court will compel the parties to go to trial with a discovery as to part only of the matter in issue. Mr. Few may be able to state a case upon which the Court will not compel the production of the documents. The only question is, whether the benefit of discovery is not to be extended to all the matters in issue; and, as the validity of the original patents is in issue, whether the Messrs. Guppy are not to have discovery upon the subject of that validity. Without, therefore, giving any opinion as to whether the production of any of the documents in question will be ordered, I think it quite clear that it will not be doing justice to these parties if they are not allowed to have liberty to file a supplemental bill for the discovery of those documents, the production of which they have failed to obtain.*

---

* The defendants became bankrupt, and no trial took place; the patents, which were probably the most valuable ever granted by the Crown, expired without their validity being questioned by others. The inven-

Jupe v.

JUPE *v.* PRATT.

In the Court of Exchequer, before Lord Abinger, and a Special Jury.—September 6, 1836.

Mr. R. V. Richards opened the pleadings.

Sir F. Pollock stated the case on the part of the plaintiff as follows:—May it please your Lordship and Gentlemen of the jury, the plaintiff in this case is an upholsterer carrying on business in New Bond-street, where I believe he has been settled a considerable number of years; the defendant is also an upholsterer, residing also in New Bond-street. The plaintiff claims to be the inventor of a new expanding table, and he complains that the defendant has made or imitated that for which he obtained a patent, and you will have to determine, first, whether in point of fact the plaintiff is the inventor of a table which is new. Secondly, whether he has sufficintly specified the mode in which that table may be made; and, lastly, whether the defendant has imitated or copied from it, so as to bring him within the laws that protect the patentee's right. Gentlemen, you are probably aware that within the last ten or twelve years, there has revived a disposition to dine at a round table; and I believe all agree who have partaken of the pleasure and the sociality which may be enjoyed at a round table, where every body is at the head, and when you can communicate very freely for all purposes all round, that it is a pleasanter thing than a very long table. The mode in which a long table may be lengthened out every body has seen, where the principle of the telescope is introduced for the purpose of creating a space, and you put in as many intermediate pieces as will be necessary to accommodate the guests. The old mode by which a round table was made more commodious was by putting in different directions, supporters, and then placing in different positions, sections, or portions of an outer circle, and then fastening them together; by this process a table which was originally constructed for a small party,

tion consisted principally of boiling sugar in a vacuum, it having been before proposed to boil liquids in a vacuum, and a previous patent had been taken by Mr. John Barton for such process. These patents of Mr. Howard, therefore, depended for their validity on like legal grounds to those of *Derosne* v. *Fairrie et al.*, vol. i., p. 664, and *Crane* v. *Price*, post.—W. C.

Pratt

might be made to accommodate a larger number by adding in this manner margins to the extent required. These tables were much in use, but they were by no means well adapted, they were not at all perfect; and Mr. Jupe turned his attention to the making an article which should accommodate itself to the wants of society, and should have all the properties of a good table; one that should have perfect steadiness, and should be capable of being arranged to one or two sizes larger with great expedition, convenience, and certainty. [The Learned Gentleman, then, with the aid of drawings and models, described the tables, and the manner of increasing them to the required size, and which will be understood by reference to the specification.]*

---

* The specification is as follows:—

"To all to whom these presents shall come, &c., &c.—Now know ye, that in compliance with the said proviso, I, the said Robert Jupe, do hereby declare the nature of my invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following description thereof, reference being had to the drawings hereunto annexed, and to the figures and letters marked thereon (that is to say):

"The object of my invention or improvement is so to construct an expanding table that the sections which compose the surface of the original or unexpanded table may be caused to diverge from a common centre, so that the table may be enlarged or expanded by inserting leaves or pieces in the openings or spaces caused by the divergence of the sections from the common centre.

"Having thus generally stated the nature of the invention, and the object to be obtained, I would remark that there are various mechanical arrangements by which the invention may be performed, depending partly on the taste of the individual for whom a table is to be constructed; I therefore propose to describe the different arrangements of parts which I have made and find to answer, and which, from experience, I can state will give full effect to my invention or improvement; but my improvement is applicable, not only to the precise arrangements hereinafter shown and described, but to various other forms of the same table, provided the property of expanding the surface of the original table, by causing the sections to diverge from a common centre, be retained, and the table be enlarged or expanded by inserting leaves or filling pieces in the spaces caused by such divergence in the manner hereinafter mentioned. These different forms or shapes must depend on taste, and so must also the details of the mechanical arrangements which govern and retain the sections of the surface of the table securely to the desired positions, and carry my improvement into effect.

"*Description of the Drawings.*

"Fig. 1, shows the surface of a table of eight sections capable of being expanded into a larger size, as represented at fig. 2: and

"Fig. 3, shows the same table still further expanded, the filling

Jupe

Gentlemen, for this, a patent was taken out by the plaintiff on the 11th day of March, 1835. The table was

pieces or leaves, *b*, *b*, being larger than those in fig. 2, thus causing the sections, *a*, *a*, of the original table, fig. 1, to be further diverged in fig. 3 than in fig. 2.

" Fig. 4, represents the surface of a round table of six sections capable of being expanded, and forming a table of another shape and size; it being, when expanded, of nearly an oval figure, as shown at fig. 5.

" Fig. 6, shews the surface of an oblong table of four sections, also capable of being expanded, as shown at fig. 7.

" In the several figures, *a*, *a*, are the sections of the surface of the original or an unexpanded table, these sections being so arranged that they are capable of diverging in radial grooves, or are controlled to move in radial directions, as will be hereafter described.

" Fig. 8, shews the sections, *a*, drawn out to the position required for introducing the leaves or filling pieces, *b*, *b*, which fill up the spaces between the sections, *a*, *a*, to complete the surface of the larger table, as fig. 2.

" One of the leaves is shewn detached in plan and edge views at fig. 9. I propose first to describe the construction of a table in which the sections, *a*, *a*, are drawn outward by hand. I afterwards intend showing constructions in which the sections are caused to diverge simultaneously by turning the surface and bed of the table round the pillars. The sections, *a*, are securely attached to sliding pieces, *c*—(see the detached underside and edge views of one of the sections, *a*, fig. 10),—moving in the spaces between the guide pieces, *d*, *d*, of the framing of the table, the ends of which guide pieces are connected together by the hoop or ring, *e*, of the framing, and form the bed of the table, which bed, in this instance, is attached to the main supporting arms, *f*, *f*, which project from the pillar of the table: the slides and guide pieces are fitted to each other with a tongue and groove. When the table is to be expanded, the sections, *a*, *a*, are drawn outward, as shewn in fig. 8, then the several leaves or filling pieces, *b*, *b*, are placed on the bed of the table, between the sections, *a*, *a*. The pieces of metal, *g*, fixed on each of the pointed ends of the leaves, take into grooves or notches formed round the metal centre pin or button, *h*, and project over and under, to complete the junctions at the centre, and to give the required strength. The sections, *a*, are then forced inward into close contact with the leaves or filling pieces, *b*, so as to form a complete surface to the table, as shewn in fig. 3. The edges of the sections, *a*, and also the leaves, *b*, have projecting ribs or tongues, and grooves formed on them so as to make the joints complete. When the table is to be reduced to its original size, the sections, *a*, must be again drawn outward a short distance, so as to disunite them from the leaves or filling pieces, *b*, which filling pieces may then be removed, and the sections, *a*, pushed inwards to form the original sized table. When it is desired to construct my improved expanding table, in such manner as to make the sections, *a*, diverge or move simultaneously from the centre in order to expand the table, the bed of the table rests and turns on the pin affixed on the top of the pillar, *k*, and the outer ends of the main

Pratt

eminently successful; it pleased by its ingenuity, it attracted the eye by its neatness and beauty, it became a

supporting arms, *f*, *f*, (see the sectional fig. 11). In figs. 11, 12, 13, and 14, the expansion of the surface of the original table is obtained by means of the curved arms or levers, *l*, *l*, connected at their inner ends to the main supporting arms, *f*, and their outer ends to the underside of the sliding pieces, *e*, of the sections, *a*, *a*; these connexions are formed by pins passed through the ends of the levers to allow of movement.

" Fig. 12, shews the bed of the original table with the sliding pieces, *c*, within the framing of the table, the sections, *a*, *a*, which are otherwise affixed to the sliding pieces, *c*, being removed to expose the parts more clearly.

" Fig. 13, is a view withthe sliders expanded, also without the sections, *a*, *a*; and

" Fig. 14, is another view, with the sections affixed to the sliding pieces, *c*, the surface being expanded, and in the proper condition for receiving the filling pieces, *b*, *b*, to make up the larger table. When it is wished to expand the table from a small to a larger size, the sections, *a*, *a*, with the bed of the table, are to be moved partly round the pillar in the direction of the arrows in the several figures, when the levers, *l*, *l*, (from their being connected at one end to the stationary arms, *f*, and at the other to the sliding pieces, *c*,) will cause the sections to diverge or move outward from the centre, the sliding pieces, *c*, and guides, *d*, causing them to move outward in radial directions into the positions shewn in fig. 14. When this is done, the leaves or filling pieces, *b*, *b*, which are to complete the surface of the larger table, are to be placed on the bed in their proper situations, and, by moving the sections a short distance round in the reverse direction, they will be made by the same means to move inward and close upon the leaves or filling pieces, and complete the surface of the table, and resemble in appearance that shewn in fig. 2. The bed of the table, in this instance, rests upon the outer ends of the arms, *f*, by a projecting rib or fillet, *m*, placed on the inside of the outer ring or hoop, *e*, of the bed of the table (see the section, fig. 11), and there are clamp pieces screwed on the top of the arms, *f*, which project over the fillet, and prevent any strain upon the table on its being moved about or lifted, by taking hold of the outer part of the sections or rim.

" In figs. 15, 16, 17, and 18, the expansion of the surface of the original table is obtained by curved bars, *l*, *l*, all of the same curvature (except in the case herein-after stated), attached to the stationary main supporting arms, *f*, and saddle-pieces connected to the sliding pieces, *c*. These saddle-pieces embrace the curved bars, *l*, and slide upon them when the surface and bed of the table are turned round, thus causing the sections, *a*, to diverge. In this instance the bed of the table is mounted and rests upon the top part of the pillar, *k*, in the centre, and on the circular bar (see figs. 15 and 18), supported by the arms, *f*, *f*, to which it is attached; the sliding pieces, *c*, *c*, are furnished with the before-mentioned saddle-pieces mounted on their under sides (see the detached under-side and edge views of one of the sections at fig. 19, and the section of the table at fig. 18). These saddle-pieces turn upon centre pins to allow them to move freely and to follow the favourite with all the servants that had any thing to do with it, from the extreme convenience of the manipul-

direction of the curved bars, *e*, (see fig. 15,) which is a plan of the arms, *f*, the circular bar, *n*, and the curved bars, *l*, *l*, which, together with the pillar, form the main stationary frame work of the table, the other parts being removed by turning the surface and the bed of the table round in the direction of the arrows. In the several figures the curved bars, from their being fixed to the arms, *f*, of the table, cause the saddle-pieces, *o*, and slides carrying the sections, *a*, to diverge or move outward simultaneously into the position shewn in fig. 17, when the leaves, *b*, *b*, may be placed on to the bed of the table between the sections, *a*, *a*, and by moving the surplus bed a short distance round in the reverse direction, the sections will be drawn inwards close upon the leaves, and form the surface of the table complete, similar to that shewn in fig. 2. When the table is to be reduced to its original size, the sections, *a*, *a*, are again to be moved in the direction of the arrows, a short distance, and the leaves removed, when the sections, *a*, *a*, will be free to be turned round in the reverse direction, by which the curved bars will draw in the slides, *c*, and with them the sections, *a*, *a*, affixed thereto so as to form the table of the smaller size, and similar to that represented at fig. 1.

" Fig. 16, is a plan of the bed placed upon the frame-work of the table, the sliding pieces, *c*, being shewn between the guide pieces, *d*, and in the position they would be in when the table is of its original size, the sections, *a*, being removed to expose the parts more clearly.

" Fig. 17, is another view, shewing the parts in the position they are in when the larger table is formed.

" Fig. 20, is another arrangement of my improved table, in which the expansion is obtained by curved grooves, *l*, formed in a bottom board fixed on to the frame of the table, but I prefer the former method. These curved grooves cause the sliding pieces, *c*, to move outward, in like manner to the bars, *l*, last described. In this instance the sliding pieces, *c*, are furnished with pins or studs, *o*, projecting into metal runners, *p*, (see the detached representations of one of the sliders with a runner at fig. 21.) The table shewn in fig. 4, is expanded into the shape represented in fig. 5, in the following manner: the side sections, *a*, *a*, of the surface of the original table are of different dimensions to the end sections, *a*, *a*, and are moved outwards into the positions shewn in fig. 22, by sliders, *c*, moving in between the guides, *d*, *d*, and are to be acted on by any of the means herein described for causing the sections, *a*, *a*, to diverge to their proper positions, observing when the sections are to be moved simultaneously that the grooves or bars, *l*, are of curves adapted to give additional speed to those sections which have to diverge a greater distance than others, and which curves are familiar to every mechanic. The sections or the filling pieces, *b*, *b*, required to fill up the spaces between the sections, are also of different shapes, in order to make up the table of the shape shewn in fig. 5, and are furnished with projecting ribs or tongues and grooves on the edges, as in the former instance.

" Fig. 23, shews the sections, *a*, of the oblong table expanded to allow the leaves being introduced to form the enlarged table shewn at fig. 7. The sections, *a*, *a*, are moved outward by sliding pieces, pins, runners, and grooves or saddle-pieces, and curved bars, or by hand

Pratt.

ations and the perfection of the machinery by which it was done.

The defendant, a tradesman in the same way of business, hearing of this, and seeing the great success that attended the new mode of enlarging a table by diverging from the centre, liked it prodigiously, and he thought it would be a very good thing if he could get a slice of this trade by some imitation of the invention; and accordingly he looked about to see whether there were not some means by which that could be done. Now I do not know that it is necessary for me to read a lecture on mechanics, but it is necessary for me to advert for a moment to a principle which I know to be familiar to your Lordship, but which you will have from the scientific witnesses. Instead of having the pieces of the table coming to a common centre, he puts in four

separately, as before described in reference to the former arrangements; and the edges of the sections, *a*, and leaves, *b*, are also formed with tongues and grooves on their edges to keep the joints perfect.

"In conclusion I would remark, that all the arrangements of my improved table should be supplied with proper stop pieces, to prevent the sections being projected beyond the necessary distance, which stop pieces may be placed in various parts according to the shape or construction of the table.

"And further, that the surface of the table may be divided into more or less sections than those herein shewn, to suit different shapes and sizes; also that a portion of the surface in the centre part of the table may be left fixed to the bed, the sections and leaves, or filling up pieces, being shaped accordingly, but I think this not so convenient a mode of carrying my improvement into effect. I would remark that, according to the description and the various figures of the drawings, it will be shewn that the sections, *a*, *a*, diverge in parallel and radial guides, *d*, but it is not essential that such guides should be radial, though I believe it to be preferable, for it will be evident that the sections, *a*, *a*, may diverge from a common centre in directions not truly radial. I would also remark that it will be evident that the improved expanded table, shewn at figs. 1 and 3, is capable of assuming any intermediate size between those shewn, depending on the size of the filling pieces or leaves, *b*.

"Having thus described the nature of my invention, and the manner of carrying the same into effect, I would remark, that I do not claim the various parts separately of which the same is composed, nor do I confine myself to the precise manner of moving the sections, *a*, *a*, of the surface of the table. But I do declare that my invention of an improved expanding table consists in constructing the same so that the sections, *a*, *a*, of which the original or unexpanded table is composed, may diverge from a common centre, and the table be enlarged or expanded by inserting leaves or pieces in the openings or spaces caused by the divergence as hereinbefore described.—In witness whereof, &c.

"ROBERT JUPE."

Jupe

pieces, and then the middle one is a square piece by itself; doubtless not so good, but it is quite manifest that the adoption of this plan has been purely for the purpose of enabling the defendant to say he does not carry them to the centre. If it were not for the slight alteration the imitation would immediately become a perfect servile copy, and could not escape the intelligence of any gentleman for a moment; but it is not because he fails to carry out the invention in all its parts, that therefore he is not amenable to the law for an invasion of the principle on which the plaintiff has taken out his patent. The specification will be read to you, it is on the record, but we shall put it in and read it. I believe there is no objection to that; it is however for my Lord and you to determine. Then the question is, can it be said that the table which I hold in my hand, which expands by diverging from a common centre, and which is enlarged by filling up with pieces, is not an imitation? and, Gentlemen, is it less an imitation because, instead of making the pieces more neatly, more firmly, to form a common centre in the middle, you clumsily put in a square piece instead—is that to exempt it from being an infringement of the patent?

I am told that this sort of reasoning is to be adopted.—Why, in the old dining table, the parts of the telescope-table would come together and form a round table capable of being enlarged longitudinally, but not capable of any other mode of enlargement, and then the question is—the defendant enlarges his table in two directions, is this an infringement of your patent? Certainly not.

You have here an arrangement by which the parts of the table are brought out as from a common centre, leaving intermediate spaces to be filled up; you have then spaces filled up by pieces that are inserted, that never existed before in any table until Mr. Jupe took out his patent, those are the very essence of his invention, which are now found in common in the defendant's; is not that an imitation or an infringement of the plaintiff's table? Shall a person be allowed to go to an ingenious mechanic and say, Sir, I see there is abroad an invention which takes much with the public, give me some mechanical equivalent by which I can produce the same effect, in order that I may encroach on the patent right of my neighbour. Why, the mechanic says, What is it you want? Why, I want to make a table

Pratt

expand as from a common centre. How is it done in the invention which you wish to share the profit of? Why it is done there, by making the pieces actually move, in a diagonal. Well then, do you make your pieces move in two sides of a triangle; the effect of those two movements will be to produce diagonal motion. I have shewn you that such is actually the case, and the public are imposed on by having the infringement sold to them, as an expanding dining table on the same principle with Mr. Jupe's. I admit that my Learned Friend may say by and by, why it is not so good; that is very likely; but a man's patent is as much injured by an imitation that does not contain so large a portion of excellence as the original, and indeed he may be more so, for a rival coming into the trade, and selling articles as good, and increasing the demand for the sale of the article, might be of some service, whereas a pretender coming in with a spurious imitation, which has not that excellence, will bring the article into disrepute, and without doing himself any good, may do his neighbour a great deal of injury. Gentlemen, under these circumstances I claim from you a verdict for the plaintiff; the facts I have stated I shall distinctly prove in evidence, I shall call before you eminent persons in mechanics, who have devoted themselves to patents and to the sciences that relate to patents; they will give you their opinion; but after all, and the more I see in life respecting these matters, the more I see it necessary to rely on the independent, enlightened, and impartial judgment which you, under the direction of his Lordship, will exercise, in taking your own views of the subject. I apprehend the criterion, whether a patent has been invaded, will be by asking a very few questions: Is the supposed imitation or infringement constructed on the same principle? Is it based on the same general views that the invention is? Does it purpose by means similar, or which are of the nature of mechanical equivalents, to bring about the same end? And lastly, is it that which would have been suggested by the original specification? Gentlemen, every one of those questions, in my opinion, must be answered in the affirmative, and if you think so, the plaintiff will be entitled to your verdict.

William Carpmael sworn. Examined by *Sir William Follett.*—I am a civil engineer, I have been engaged for many years in obtaining patents and drawing specifications,

Jupe

I know what had been done in expanding tables previous to Jupe's patent. There was a patent in the name of Gillow in 1800, for the telescope table, this was by means of slides, the legs also pulling out. The effect of the plaintiff's invention is to construct an expanding table of sections which compose a surface, such sections diverging from a common centre. There is nothing of that sort in Gillow's patent. There are tables with folding flaps to lift up on the sides. There are round tables that were increased in size by drawing out slides, and putting an extra rim on. In Jupe's invention I should say there were three essentials to be considered in making it: first, that the original table should be divided into sections, that point to, and produce, a common centre; the second, that they should diverge from the common centre, or pass away from it, and leave spaces between them; and the third, that those spaces should be filled in with filling pieces. I consider the two last distinctly novel, and the combination of the whole also novel as applied to tables. In speaking of the first not being a novelty, I mean that other tables have resembled it in appearance only; but there was nothing before this patent of the second and third, there was no divergence from the common centre producing spaces. I have seen the defendant's table, it is on the same principle as the plaintiff's; he has two sets of slides, they pass two sides of a triangle in place of passing on one side, which is merely a mechanical equivalent, but such a one that no one would use, because it is done in twice, when it might be done at once, by taking it diagonally.

Lord Abinger.—That is, in effect, taking the two sides of the parallelogram.

Witness.—There would be no difficulty in a mechanic who had seen the specification of Mr. Jupe's patent, making a table on the plan of the defendant, but I should say, he would pursue the plaintiff's in the simpler course, as pointed out. I can see no other reason for adopting the two motions, except it be to give it a different appearance.

Lord Abinger.—You see no advantage gained by that.

Witness.— None whatever.

Lord Abinger. — So far as they both consist of making the sections recede from the centre—

Pratt

Witness.—They are identical.

By *Sir W. Follett.*—When the plaintiff's table, and the defendant's table are shut, and when they are both open, they are precisely the same. The defendant's table, although it has the two motions, is governed by a radial motion. By great care in drawing it out you may make it pass in the diagonal, that is, if the force is kept exactly equal at all times. This model is the same as the other, except that it has a series of parallel grooves put into it, to govern its movement, you may disconnect those, then it is the same as the other model. If I use them to govern the motion it produces the diagonal motion. If I take them off, then it is the defendant's table. I have applied those radial guides for the purpose of showing the mode in which the diagonal motion is produced (merely as an illustration), to govern the departure from the centre. I could do the same, with a good deal of care, without those guides, it does not in the slightest degree alter the principle.

Lord Abinger.—Applying the radial guides of the plaintiff's to the defendant's table, you produce the motion exactly.

Witness.—Precisely, my Lord. In my judgment, the one table is a copy of the other: there is no difference at all in principle—it is a copy.

Cross-examined by *Mr. Hill.*—With a little care I could produce the same motion in the defendant's table without the radial guides, as with them, on a model; two persons might do the same with a dining table. You render the use of radial guides unnecessary by having the double motion. If the radial guides were added to the defendant's table, and all the guides were of the same length, they would of necessity restrain the power of opening the defendant's table to the expansion of a circle.

Lord Abinger.—That is to say, while they are expanding, they keep the circular form.

Witness.—Yes, if the guides are all of the same length.

By *Lord Abinger.*—Although the defendant's table does not keep the circular form while expanding, when they have expanded they assume the circular form.

By *Mr. Hill.*—The one I saw in Bond-street, was circular, and only made up of the circular. The one I saw at Stratford-place had an additional property, that of elongating. The plaintiff's table will open oblong or cir-

Jupe v.

cular if it is made for that purpose. The Stratford-place table would act as a common Gillow's table, the plaintiff's never will—it may be expanded as far as the maker pleases by adding legs, according to the length—it may also be varied in width, as much as is required. If the defendant's table is required to expand by the act of turning it round, the mode of throwing out the sections would require to be altered by the adding the diagonal guides. The plaintiff's table may be made to expand into an oblong, by making the radial guides of different lengths, as is shewn in fig. 23, in the drawing. Every further expansion of the plaintiff's table requires a different set of filling pieces. If you enlarge the defendant's table in a circular form, then you are obliged to have filling pieces to correspond with the plaintiff's. (The Learned Counsel then exhibited a model of the defendant's table in the shape of a telescope table.)

In increasing it longitudinally, there is no reason why the pieces you have inserted may not remain in.

By *Lord Abinger*.—You do not make it a circle by that; you widen it, but do not make it a circle. How is that? I want to know whether your observation applies to a perfect circle?

Witness.—I did not say that the defendant's table was of no utility—I think it useful. It adds another combination, which is the oblong. The Bond-street table is capable of expanding from one circle to a larger circle, and if you want an intermediate size, it is by filling pieces, on the same rule as the plaintiff's. If they had different sized filling pieces, they might make it oblong; there are oblong tables shewn in the plaintiff's specification; the form depends entirely on the filling pieces. The specification in figs. 4 and 5, shows means of making a table from the circular to the oblong; a mechanic could readily place in filling pieces, to make the table either oblong or circular; for each purpose, or difference of size, there must be distinct filling pieces, but the filling pieces necessary in the defendant's table, would do for the plaintiff's table, and produce like results. The Bond-street table, so far as it was explained to me, was a small circular one, divided into four equal sections, and capable of expanding into a larger circle; it was capable of expanding into any intermediate circle, depending on the filling pieces used.

Pratt

The nature of the figure of the table depends on the filling pieces.

Lord Abinger.—Nobody can dispute the proposition; it is self-evident; you enlarge the circle by making the other pieces recede from that centre; you must fill it up with a larger centre.

Mr. Hill.—I should not have taken so much trouble, but my Learned Friend *Sir F. Pollock*, a senior wrangler, said it was impossible.

Lord Abinger.—I never understood him to say it was impossible.

Sir F. Pollock.—If they use a centre piece they must move it to enlarge the size, if they do not use a centre piece, but a piece all across in the way, you do without a centre piece.

Lord Abinger.—Your examination has a tendency to shew that your client's table had some additional advantages; that does not go to the question of whether that single advantage of making that circle expand is an imitation of the plaintiff's or not.

Mr. Hill.—Your Lordship will find by and by that it is very material.—I am obliged to your Lordship, for directing my attention to the real point. I think it will be seen this is the road to it.

Lord Abinger.—The Bond-street table, the witness speaks of, it is clear might be made oblong; wherever you make the two semicircular ends recede there must be a space between. According to the principle of defendant's plan it is to make the two semicircles recede, first taking them in one line, then in the other.

Mr. Carpmael, re-examined by *Sir F. Pollock.*—The circumstance of the defendant's table not expanding when the top is turned round is nothing to do with the question, that is only one of the modes used by the plaintiff. If the plaintiff (speaking to a model, the surface of which was divided into four sections) first draw out in one direction, he can make the table somewhat longer than broad.

Lord Abinger.—The plaintiff's table can do that, and with all the varieties the slides admit of.

Sir Frederick Pollock.—Using suitable filling pieces, fig. 23 does so, in that figure, if they were separated one foot on one side, the other might be three feet, it is capable of expanding longer one way than the other; a person looking at the specification could not fail to make

Jupe v.

a table within the range of the sliding, and depending on the filling in pieces almost of any figure.

A Juryman.—Might the jury be permitted to have that part of the specification which has been put in, read again, which relates to fig. 23?

[At the request of the jury *Sir F. Pollock* again read that part of the specification relating to fig. 23, and resumed the re-examination of Mr. Carpmael.]

Witness.—When I went to the defendant's shop, I asked to see their new expanding table; it was a circular one. It was made to expand by pulling the sides, and then the end pieces, and then they applied the filling-pieces.

Lord Abinger.—It is quite plain that it might also be made oblong.

Sir Frederick Pollock.—Quite plain; I stated that when I opened the case.

Witness.—They shewed me the four filling pieces and a centre piece; if they required to vary the size of the table, it would be necessary to have different-sized centres. They shewed me no leaf or flap for the purpose of making it answer the purpose of Gillow's table. The radial guides shewn in the model are not in the defendant's table; they were merely introduced to illustrate that they would go out in the radial lines, if they were constructed to do so, notwithstanding their peculiar movement. The effect of the guide is merely to control the power when moving the sections outwards; they are not in the defendant's or any other table; they were merely introduced to shew that the parts of the table could by that means be made to move actually in a diagonal. I am of opinion that a table capable of expanding from a common centre, and the spaces produced by such expansion capable of being filled in with additional pieces, would be a decided infringement. The only difference is in the details below, which produces the combined movement; the plaintiff producing the same effect by a single movement in a groove.

Francis Bramah sworn. Examined by *Sir F. Pollock.*—I have read the specification of the plaintiff's patent. I consider the invention is perfectly explained, and that an ordinary workman would be able from that alone to carry the invention into effect. I never saw a table expanding from a common centre before the plain-

Pratt

tiff's patent; in my opinion it is quite new, and very advantageous. Fig. 23, in the drawings, is an oblong table, and continues oblong, the two sides separating not so far as the two ends. This may be done by the machinery, or by the simple mode of moving in grooves. The principle shewn in fig. 23, applied to a circular table with suitable filling pieces, would convert it into an oblong. The table I saw in Bond-street, at the defendant's shop; I believe it was a circular table, but I did not pay much attention to the form; my particular object was to ascertain its principle, whether it was capable of being enlarged by diverging from a common centre, and putting in the proper filling pieces. If a point is made to move in a groove, and that groove is diagonal, there is no mechanical difficulty by two motions to produce the same result. It is a matter perfectly well understood by the most common and simple mechanic.

Lord Abinger.—I am at a loss how to apply this: if you move the two forces that have been described at the two sides, you describe the diagonal. You do not get to the same point, do you? you do not obtain the same object? If your object is to get the circumference of a particular part of a circle just exactly where the diagonal of the square will point, one force may do that; if you apply plaintiff's patent. Gillow's is quite distinct; there is no two forces equal to two sides of the square, you won't get the diagonal by moving those two forces at the same time; you cannot move in the same place.

Sir Frederick Pollock.—You produce a divergence from the common centre.

Lord Abinger.—I dare say it is my dulness. I do not see the application of the principle to this particular case.

Sir F. Pollock.—My Lord, in this way; if the plaintiff made his pieces move out in a diagonal line, you have nothing to do but to cut that into two movements, to produce the same result.

Lord Abinger.—Yes, no doubt.

Witness.—I have attended to that; the effect is precisely the same.

Sir F. Pollock.—Here the four pieces go out in the diagonal. Here you make them move through one side, and you make them move through the other side of a triangle, and the result is diagonal motion outwards.

Lord Abinger.—Suppose that you made them move in

Jupe v.

the same way, it would come to the same point. It is a mere variation of the principle.

Sir F. Pollock.— If it so happens, the mode of doing it, by which it is imitated, is one of the first things in mechanics, it makes it more clear that it is an imitation.

Witness.—Both tables diverge from a common centre, and are both filled up with appropriate pieces, according to the size you want; there is no difference in principle between the one and the other. I look at the ultimate effect; the change is a modification merely to depart from what has been originally contrived, to produce precisely the same effect.

By *Lord Abinger.*—One is one mode of making it, the other another, and made to produce the same identical effect.

Lord Abinger.—The point being whether the invention lies in the effect or in the mode of producing it; if it lies in the effect, they are the same; if in the mode of producing it, they are different.

Mr. Hill.—I think I shall shew that neither the mode nor the effect is the same; if I shew either, probably it will be sufficient.

Cross-examined by *Mr. Hill.*—If the table that the plaintiff made is the same size as the table of the defendant, and both have given to them an equal quantity of motion from the centre, when they are expanded they would be identically the same; nobody would be able to distinguish one from the other. I cannot expand fig. 23, into a circle as it is shown, because some of the segments go farther from the centre than others.

Mr. Hill.—Shew me any figure in the drawings of a table which you can at will expand either into a circle or into an oblong.

Sir F. Pollock.—There is none such.

Mr. Hill.—Then that quite relieves me.

Witness.—The same table would produce two effects if it went by machinery (if by hand it is another thing), if by machinery you come to give conditions, which be to expand (as in fig. 22) the four small leaves to a certain distance from the centre, and also the two large ones, taking the large ones to go twice the distance to the others, that would be a condition you could not alter. If you took the first mode by hand, you might then make it a round table or a long one.

Pratt

Re-examined by *Sir Frederick Pollock.*—In the drawing, fig. 22, shews a table where an oval might be made at the same time as an entire circle. If the work underneath was different it would make a different figure; if machinery is used it drives out the sections, and they do not move in grooves, and must all move together, but if they move in grooves separately by hand, they are capable of any required diversity.

George Cottam sworn. Examined by *Sir W. Follett.*—I have been an engineer for the last twenty years; four or five years a cabinet maker. I know the telescope table, and have made many of them. I consider Jupe's quite new in principle, and a very great improvement. I consider the principle of Jupe's invention to consist in cutting the plane of the table into a number of sections, and these are to radiate or diverge from a common centre. All the dining tables I have hitherto seen have been drawn out, none of them have diverged from a common centre. Gillow's elongates. The defendant's table is precisely the plaintiff's invention as applied to Gillow's, so that it will elongate and form into the plaintiff's as well. It is an application of the plaintiff's to that of Gillow's. The principle is precisely the same as that of Jupe's.

By *Lord Abinger.*—The mechanical combination for moving the parts is not the same; one is by slides to the right, and then to the left, the other moves in the diagonal. They are mechanical equivalents. One has the same effect of conveying the section to the same station that the other will.

Lord Abinger.—Now suppose a man should say,—I will have a table with a frame that has slides to draw out; I will have one set of sections to form a circle to make a round table; to make a small one, and to make a larger one I will pull out the slides, and that is done by the hand entirely; would that be an infringement or imitation of the plaintiff's patent?

Witness.—I think it would, if it radiated from a common centre, and increased all ways.

By *Lord Abinger.*—I consider the invention not in the mechanical contrivance producing it, but in the result itself: producing a table combined of several pieces. There is no necessity for having filling-pieces for every size. You may use the smaller filling-pieces for the large table, which any mechanic at first sight would see, if he

Jupe v.

opened his table, he would naturally have an opening before him, which he would easily fill up. He may use the same pieces to the large table.

Lord Abinger.—I consider the plaintiff's invention to consist of forming a round table by sections from a centre or sectors of a circle, and not in the mode of producing the result.

Witness.—Exactly. The same table which makes a circle will make an oval. The defendant's may make a very long table, by applying the plaintiff's invention to Gillow's table. I saw the Bond-street table, the mechanical principle of which is precisely the same as the plaintiff's patent.

Cross-examined by *Mr. Rotch.*—I have seen a great many of Gillow's tables. The principle of the plaintiff's table consists in cutting the plane of the table into various sections; that description does not equally apply to Gillow's, which is only cut across the diameter. It makes two sections. The table which I have here (a model of one of the defendant's) has the sectors radiating from a common centre. An oval must have two centres. This table has six pieces, they have radiated from a common centre. I do not say they will always be in that radiation, but these sectors have radiated from a common centre. This is the original plane, cut into four sections.

Mr. Rotch.—I want to know whether the table, being composed of six pieces, you can put your finger on any point that is the common centre of those six pieces.

Lord Abinger.—How can that be? No man speaks of a common centre except to a circle.

Mr. Rotch.—The witness says it is so.

Lord Abinger.—No! I beg your pardon. He says, the plaintiff's invention consists in dividing a circular table into sectors.

Mr. Rotch.—I am asking if that is so.

Lord Abinger.—It is not so with an oval table.

Witness.—I have said an oval must have two centres.

Lord Abinger.—You need not examine a witness about that which is evident to the senses. If you want to establish the fact that the proposition does not apply to a table—not a circular table, there is no occasion to ask the witness about it.

Mr. Rotch.—It appears to me there is no similarity

Pratt

between the two tables; the witness has spoken to the contrary.

Lord Abinger.—You may occupy what time you please. I have only said, in my opinion there is no occasion to occupy time with any witness to prove an oval is not a circle.

Cross-examination continued.—The likeness in this table to the plaintiff's is, that four sectors have radiated from a common centre. The circular table has been cut into four sectors and radiate into an oval shape, before the other pieces could be put in. The original plane is divided into four sectors. I consider the word radiate to mean a departing from a centre, or diverging from a centre, as the rays of light diverge from a luminous body. There cannot be a radiation without a centre. There can be no radiation in Gillow's table, it only elongates.

Re-examined by *Sir Frederick Pollock.*—The shape of the table is of no consequence with reference to the common centre, from which the parts diverge; it might be square, or oblong, or oval, or any shape. This is common to both plaintiff's and defendant's tables, they both diverge from a common centre.

Lord Abinger.—The plaintiff's table is not confined to a round table, it is an improvement to expanding tables: if it had been square it would have been the same principle.

Invention an imp
in expandg. tables

Mr. Hill.—We shall not give your Lordship any trouble on that point.

John Isaac Hawkins sworn. Examined by *Sir W. Follett.*—I consider that Mr. Jupe has taken Gillow's table, which is elongated, by sliding one half of the circle from the other, for his model, and considered he might elongate it as a circular table. He has done it, and produces elongation both ways. He produces his expanding table by cutting Gillow's table in two. It radiates from the common centre of the original circle, still having relation to that centre. The sectors all depart from a common centre any way you please, either directly or indirectly. You may alter the shape of the table.

By *Lord Abinger.*—If Gillow applied his invention to both sides of his table, Jupe would have been forestalled. There is no common centre in Gillow's table as there is in Jupe's. The defendant, as well as the plaintiff, has taken Gillow's table and bisected it.

Jupe v.

Invention consist in result not in means of produc. same.

Lord Abinger.—The invention does not consist in the contrivance by which it is done, but in the result it produces.

By *Lord Abinger.*—You think Mr. Gillow having got a patent to open his table by cutting it into two pieces, that it is not in the same invention if any other person cuts it another way, and applies the patent to spreading it outwards.

Witness.—The other cuts it the other way to spread it out broader, by which he obtains the new use of a circular expanding table, instead of a long one. Gillow's table could only be expanded by elongation. The defendant's is done on the same principle as the plaintiff's; it radiates from a common centre. The surface proceeds on the same mechanical principle. The patent appears to me to confine itself to the surface, and not to the directing machinery. I have read it with great attention.

Cross-examined by *Mr. Hill.* Gillow divided his table into two parts; he halved it. The principle of the plaintiff is for dividing his table into four or more parts, that will enable him to expand it circularly. Gillow's table was confined to one line of expansion.

Joseph Read sworn. Examined by *Mr. Richards.*—I have been a working engineer, or machinist, at least twenty-five years. In 1835 I was employed by Mr. Jupe to make a model of his table, from a pattern he brought me, made of card-board. In that model there was no machinery underneath to make the parts diverge. Mr. Jupe applied to me to make some machinery to make the sections move simultaneously. His model drew out.

By *Lord Abinger.*—He did not give you any model of the machinery, but only a card divided into four pieces, and desired you to construct some machinery to effect that mechanically instead of by hand.

Witness.—Yes. I have seen a model of Pratt's table; in my opinion it is on precisely the same principle as Jupe's. The machinery used by Pratt is not the same as that of Jupe's; it is only adapted from Gillow's slides. Looking at the plane of Pratt's table, the principle of expansion is the same exactly as Jupe's; in both tables the pieces radiate from one common centre.

Examined by *Sir Frederick Pollock.*—I invented the mechanical parts for moving the pieces out simultaneously. The table is quite perfect without my machinery.

Pratt

Lord Abinger.—So that it comes to cutting the table into four pieces.

Sir Frederick Pollock.—It comes precisely to that model, which is there, of the table moving out on groovings, and filling-pieces being put in.

Lord Abinger.—So that when Gillow's patent expired nobody could apply it both ways; no matter whether he took Gillow's machinery or Read's machinery, that is indifferent to the question.

Is a patent for a ne particular machine; not the question -

Sir Frederick Pollock.—Gillow's is a totally different thing. Gillow's patent was lengthening a table; Jupe's is a patent for expanding circular tables.

Lord Abinger.—By the same means that a table is lengthened it may be widened.

Sir Frederick Pollock.—So it may, for aught I know.

Lord Abinger.—The witness says the defendant has applied Gillow's patent for widening a table as well as lengthening it.

Thomas Bird sworn. Examined by *Sir Frederick Pollock.*—I have been a cabinet-maker for the last forty years; my attention has been called to the construction of tables ever since I became a cabinet-maker. I never saw a table that enlarged by diverging from a common centre. I consider it quite new, and very useful. I have read the specification, and could make the table from the specification alone, and I think any competent workman could.

Cross-examined by *Mr. Hill.*—If a Gillow's table were sent to me I could soon alter it into one of the defendant's tables; I should saw through the two halves, and make them quarters, and by using the slides similar to Gillow's it would produce a table similar to the defendant's.

Edward Bailey sworn. Examined by *Mr. Richards.*—I am an upholsterer and cabinet-maker. I have been in business many years, and am well acquainted with the several sorts of tables that have been in use since I have been in business. I know Jupe's table; it is quite new, and very useful. Until I saw Jupe's tables I never saw one with pieces diverging from a common centre. I have seen a model of Pratt's table; I consider that it is made on precisely the same principles as Jupe's.

Thomas Banting sworn. Examined by *Sir Frederick Pollock.*—I am an upholsterer and cabinet-maker. I have been in business upwards of half a century. I have seen

Jupe v.

Jupe's table; in my opinion it is quite new. I never saw a table previous to Jupe's that enlarged by expanding from the centre. I have seen a model of Pratt's table, and I should say it is exactly the same as Jupe's; they both start from a common centre; that is a term well known in cabinet making.

Robert Hughes sworn. Examined by *Mr. Richards.*—I am an upholsterer and cabinet-maker, and am well acquainted with tables that have been in use for many years. I have seen Jupe's; I consider it perfectly new; I never saw anything like it previous to his patent. I have seen the model of the defendant's table; in my opinion the same effect is produced in both.

John Pringle sworn. Examined by *Sir Frederick Pollock.*—I have been acquainted with cabinet-making all my life. I know Jupe's expanding table; in my opinion it is quite new. Before he had his patent I never saw a table that radiated from a common centre. The model of Pratt's which I have seen here to-day is a combination of Gillow's expired patent and Jupe's existing patent. Such a table could not be produced without adopting Jupe's patent.

Cross-examined by *Mr. Hill.*—Gillow's patent applied strictly to a table that expanded longitudinally. Mr. Jupe has taken out a patent for a table to expand laterally, and I think I could not do any thing with that table without infringing Mr. Jupe's patent. I could convert a Gillow's table into the defendant's, but not without adopting the patent of Mr. Jupe.

Henry Holland sworn. Examined by *Sir Frederick Pollock.*—I have been a cabinet-maker upwards of forty years. I have seen Jupe's table; I consider it perfectly new, and most useful. I have seen a model of the defendant's table; in my opinion it is a decided imitation of Jupe's.

William Francis sworn. Examined by *Mr. Richards.*—I have carried on business as a cabinet-maker and upholsterer upwards of forty years. I have seen a model of Jupe's table; I consider it quite new. I think Pratt's is a perfect imitation.

Henry Whittaker sworn. Examined by *Sir W. Follett.*—I am employed by cabinet-makers as a draughtsman. I have seen Jupe's table; in my judgment it is entirely new; I consider it decidedly better than Gillow's

Pratt.

table. I am of opinion that Pratt's is on the same principle; the only difference is that he goes a roundabout way to obtain the same effect.

Henry James sworn. Examined by *Mr. Richards.*—I am in the employ of Mr. Jupe. I am acquainted with the patent tables; there is a great demand for them.

Sir Frederick Pollock.—That is my case, my Lord.

Mr. Hill.—My Lord, I am to submit, my Learned Friend must be called.

Lord Abinger.—Why so?

Mr. Hill.—My Lord, in the first place, I submit that his specification does make a claim for a process, or a mode, of doing this, and that it appears by the evidence of the foreman, that a part of that mode is his invention, and not his master's. I believe that point has been taken with success before—the case of *Barker and Harris* v. *Shaw*,* in which your Lordship was Counsel, at Lancaster—

Lord Abinger.—No doubt, no doubt; but the witnesses have said the mechanical contrivance by which it is effected is not new, and if it is new it is not his.

Mr. Hill.—That is another point; the witness said that was his invention and not his master's—one part which is not described.

part of Specon

Lord Abinger.—"The object of my invention or improvement is so to construct an expanding table, that the sections which compose the surface of the original, or unexpanded table, may be caused to diverge from a common centre, so that the table may be enlarged or expanded by inserting leaves or pieces in the openings or spaces caused by the divergence of the sections from the common centre." You see he does not say my invention is to cut a table into sections, but so to contrive the sections, so to construct an expanding table, that the sections which compose the surface, may be caused to diverge from a common centre.

Mr. Hill.—Then he goes on to describe the mode in which they are caused to diverge, and all the modes which he describes, are the modes of divergence in radial lines from that centre; he does not say what his witnesses now say, that his principle lies on the surface of his table.

---

* Webs. R., p. 126.

Supe v.

Sir Frederick Pollock,—I beg your pardon.

Mr. Hill.—His witnesses have told your Lordship, if I have correctly understood them, that the principle of this invention is to have the plane of a table divided into sectors, so that they may diverge from a common centre. Now here your Lordship knows the whole patent must be construed together. The title of the patent is for an improved expanding table. Now, my Lord, that certainly, if there is any force in language, includes some process by which it is to be expanded. Then he goes on to say, that being the title which must always be construed with the specification; "The object of my invention, or improvement, is so to construct an expanding table, that the sections which compose the surface of the original, or unexpanded table, may be caused to diverge from a common centre, so that the table may be enlarged, or expanded, by inserting leaves, or pieces, in the openings, or spaces, caused by the divergence of the sections from the common centre." My Lord, he talks first of an expanding table; that includes the whole. The whole machinery of the table, if the table can be called a machine; the whole apparatus; every thing that belongs to it; then he tells you he is going to take out a patent for such a construction, as shall produce a given effect; and he figures many modes of construction, and describes them. They have all this in common, that all the sectors diverge in radial lines, from his centre; that they have all in common; and some of those processes which he describes, and which he claims, are invented by the plaintiff's foreman: that is the first objection which I make. But, my Lord, the second objection is, that his witnesses describe what they are pleased to call the principle of the patent in one way, and the patent itself describes it in another. They describe, as I have before said, the principle of this patent to be a mode of cutting the surface into sectors. Then my objection is, that when I read the specification, I do not find that it is a patent for cutting a table into any particular number of sectors, or arranging those sectors in a particular way towards each other; but I find it is for an expanding table, with such a mode of construction, as that it can be expanded, and then he ties himself down, really and truly, as it appears to me, to a particular species of expansion, because he tells you no other way to work the

Pratt

patent, but by making the expansion in radial lines from the centre. The third objection is, that there is no novelty in the invention; none at all. No novelty in the invention as described by the witnesses. If I am to take the invention from the witnesses, namely, that the plane of the table is dealt with in a particular way, then I am to ask your Lordship, as a matter of law, that if a circle has been cut by one man into two semicircles, whether another man can take out a patent for cutting it into four quarters. I should think not. Therefore, my Lord, I say there is no novelty; and that is my third objection. But, my Lord, supposing there to be some novelty; let us see then, is there any infringement? Have I touched the novelty, whatever it is; let it be where it may; let it be in the surface; let it be in the frame; let it be in the whole put together; let it be in the whole use of it: have I touched that novelty anywhere? I apprehend not. What have I done? I have taken Gillow's table, and having used that table in a way that I may, I have drawn it out to its extremity. Is there any reason why I should not cut these two semicircles into two quadrants?

Lord Abinger.—According to *Sir Frederick Pollock*, his patent would have been equally good if he had said, "My patent consists in applying Gillow's principle to widening a table, as well as to lengthening it."

Mr. Hill.—Yes, my Lord; I apprehend so. It would have been equally good. I humbly submit to your Lordship, that it is neither. Now, my Lord, perhaps it is almost idle to argue after the witnesses have given up, and my Learned Friend has given up his radial lines, and his mode of drawing out. Perhaps it is almost idle to inquire whether we have used any of the means claimed by the plaintiff, in order to produce our effect. Why no! We have not touched his at all. We have not used one of his means. The elongation is produced by Gillow. Our table grows longer by the invention of Mr. Gillow.

Lord Abinger.—And wider too.

Mr. Hill.—How does it grow wider? Does it grow wider by any of Mr. Jupe's radial guides or radial grooves? Not at all. It grows wider by a groove which is at right angles to the long groove, and by which it is drawn out. Mr. Gillow's is a right angular motion; it lengthens; Mr. Pratt's is a right angular motion which gives breadth.

Jupe

We have only to work Pratt's first; draw out Pratt's, and then the original table having been circular, I have as much right to say Mr. Pratt gives length as that Mr. Gillow does. Mr. Pratt gives you length, and Mr. Gillow breadth. It is a play on words to say Gillow's gives length, and Mr. Jupe's gives breadth. That which you begin with you may consider as giving length, because when you have drawn it out once, it is longer than it was before, and that which you end with may be considered as giving it breadth. The first plea is, we have infringed his patent. I apprehend we have not infringed it, even if it was a good patent, if his invention was perfectly well described, because I apprehend that our invention is entirely on different principles altogether. Then again I apprehend that on the second plea, that this gentleman is not the inventor, for it is his workman; on the third plea, that the plaintiff has not properly described the invention. I am assuming for the moment that we have infringed his patent, that he is the inventor of this; I am assuming that where he has described, where he has told you how by means of two motions at right angles with each other to produce this effect—

Lord Abinger.—You see, *Mr. Hill*, let us fully understand each other. *Sir Frederick Pollock* contends the invention does not consist in the mechanical part at all; the witnesses say the same thing, and I incline to think the specification says the same thing. I will read the words: "The object of my invention or improvement is so to construct an expanding table that the sections which compose the surface of the original or unexpanded table, may be caused to diverge from a common centre, so that the table may be enlarged or expanded by inserting leaves or pieces in the openings or spaces caused by the divergence of the sectors from the common centre." I must admit the words are somewhat obscure, and that it might be a matter of some doubt whether or not the mode of diverging, or the act rather,—the act of divergence itself was not part of the invention. I think when you come to look at it, it is not so. Supposing he had described nothing more than that, and then a man had taken his table and cut it into sectors in this way, and then moved them by his hand and filled up with pieces, it will be contended that was his invention. Then it goes on to say, you observe, which confirms me

Pratt

in the view I have taken, "Having thus generally stated the nature of the invention, and the object to be obtained, I would remark that there are various mechanical arrangements by which the invention may be performed," and he says, I do not claim those mechanical arrangements; but for the convenience of the public I will set forth some of them which may be applied to perform it. That I take it to be the invention.—Then comes the question whether that be an invention.

Mr. Hill.—It says, "In conclusion I would remark, that all the arrangements of my improved table should be supplied with proper stop-pieces," and "I would remark that according to the description, and the various figures of the drawings, it will be seen that the sections, *a*, *a*, diverge in parallel and radial guides, *d*, but it is not essential that such guides should be radial, though I believe it to be preferable, for it will be evident that the sections, *a*, *a*, may diverge from a common centre in directions not truly radial;" which is very true, your Lordship sees, because if you were to make the rays curvilinear, all curving the same way, that would produce the same effect. That being so, he has guarded you against that merely colourable alteration of the radial motion. What I want to call your attention to is this, it is radial motion, motion by radial lines, which alone he gives you, and to which alone he refers.

Lord Abinger.—He concludes at the bottom, you see, "But I do declare that my invention of an improved expanding-table consists in constructing the same, so that the sections, *a*, *a*, of which the original or unexpanded-table is composed, may diverge from a common centre, and the table be enlarged or expanded by inserting leaves or pieces in the openings or spaces caused by the divergence as hereinbefore described." So that you see if you take it by the hand, and if you take the sections and place them further, or change their position in any way so as to fill the interstices by other pieces, that would be still his patent.

Mr. Hill.—Probably your Lordship supposed I was referring to the machinery which shoots it out; I am not; when I speak of radial lines or grooves, I do not speak of the machinery invented by the foreman; I mean the grooves along which the sectors pass, whether moved by hand or any mechanical means. I say in all these figures

Jupe v.

he has given those grooves perfectly radial; it is those grooves of which he speaks in the passage, the grooves, not the mechanics—

Lord Abinger.—You think he makes the grooves part?

Mr. Hill.—Yes; he gives twenty-three drawings; in every one of them, there are these grooves; in every one of them, the grooves are purely radial, some have an additional apparatus by which the whole number of sectors, or whatever they may be, are shot forth at once, others are without it, and in the latter case the sectors must be drawn out one by one by the hand; in all, the means of divergence from a common centre are in purely radial lines.

Lord Abinger.—That you see is a matter of fact; your invention is a round table cut in four parts, you place the sections in a position that they still point towards the centre; in an oblong table they do not.

Mr. Hill.—I should have thought it was matter of law, whether this invention was included in this written instrument which your Lordship will construe, my present objection is, that our table is not to be found in the specification. I want to know where he finds in the specification, proof that he has complied with the condition of the patent, namely, that he has discovered his invention to the world; so far as this goes, I say he has not done any such thing.

Invention consists not in modus operandi but in effect produced such effect being new

Lord Abinger.—What he says is in effect this,—my invention does not consist in the *modus operandi*, it consists in producing an effect, no matter by what means, which effect was never produced before, that is the effect of making the parts of a table being divided into more than two, recede from each other, and therefore from their common centre, and making a large table by filling up the interstices. That is what he considers to be his patent.

Mr. Hill.—I submit first of all that is not his mode of specifying. Having made these observations it will now be for me to address the jury.

Question as to whether Specn in the descriptive part embraces the particular machine s. may be for jury & question upon the invention as described in the instrument may be for the Court.

Lord Abinger.—I think on that part of the specification, whether it consists of the mere sections of the surface of the table, or whether it embraces any part of the invention, that is a matter undoubtedly that may be open to doubt, and you may go to the jury on it, or it may be reserved for you, if it embraces any part of the

Pratt

mechanical construction, then the witnesses have put him out of Court, because they say "that is no part of the invention," another witness says, that is my invention and not his, and, therefore, on that part he is out of Court.

Sir Frederick Pollock.—It is on that point I wish to address a few words to his Lordship.

Lord Abinger.—I put it in this way; I am the more anxious to do that because I wish to hear *Sir Frederick Pollock* on it. Supposing after a gentleman has taken out his patent, and his patent is for elongating a table by slides; if the table be very long he draws out the foot, if not very long he does it by other means. It is for elongating a table. Suppose any other man immediately after Gillow's patent, had widened one of the tables in the same way, would not that have been an infringement of Gillow's patent?

Sir Frederick Pollock.—It is very likely it would.

Mr. Rotch.—I wish to address his Lordship on the subject of the specification. My object in wishing to address your Lordship is to endeavour to show most distinctly, which I hope I shall be able to do, that this specification cannot be construed in any other way than as a specification for the construction. It appears to me, my Lord, some limit must be put in all specifications to that rule of law which allows a patentee to state, "I do not mean to claim the particular mode by which I carry the invention into effect, I mean to claim the principle." Why we all know perfectly well there is no patent that is comparatively worth anything that does not involve a principle, and it is laid down in the books in order to maintain that principle, you must show some practical mode of carrying it into effect, that is the general rule of law, that must be construed with some limit as to specifications. I take it in this particular specification it is manifest on the face of it, the inventor intended from the beginning to the end to claim his radial bars as the construction. I do not think any disclaimer he may make of the means by which he does it can so entirely throw him at large, that he may grasp at every possible means of arranging this surface of the table so as to form his invention. I am now taking the point your Lordship puts; that if it be conceded from the witnesses that the construction is not new the patent is bad; but my friend *Sir Frederick Pollock*, and those with him contend "Yes, but

qy.
The limit is that the principle be embodied in a practical shap

qy

Jupe v.

we do not claim that." If I can show to your Lordship distinctly on the face of the specification, and from any argument I may urge, he does claim it, the specification will prevent his getting out of it, and thereby fix him with a nonsuit. The specification sets out with stating, "the object of my invention or improvement is so to construct an expanding-table that the sections which compose the surface of the original or unexpanded-table may be caused to diverge from a common centre." May be caused to diverge. The cause of that divergence must be the machinery,— some "so that the table may be enlarged or expanded by inserting leaves or pieces in the openings or spaces caused by the divergence of the sections from the common centre." That is the object; then he goes through a long detail. The specification shows the various modes in which he does it. After describing the various detailed manners in which he does it, he says this, "In conclusion I would remark, that all the arrangements of my improved table should be supplied with proper stop pieces, to prevent the sections being projected beyond the necessary distance, which stop-pieces may be placed in various parts, according to the shape or construction of the table." That is a fair limit not to be tied down. Those are the sort of limits intended to be given to the patentee when he says, I do not confine myself strictly to the manner it is hereby described, and further, that the surface of the table may be divided into more or less sections than those herein shewn. That is a fair variation, because six radial lines will carry out six pieces, as well as four radial lines will carry out four. "The surface of the table may be divided into more or less sections than those herein shewn, to suit different shapes and sizes; also that a portion of the surface in the centre part of the table may be left fixed to the bed, the sections and leaves, or filling-up pieces, being shaped accordingly." It is clear the mere filling-up pieces can form no part of this patent. That seems to place the patent more strongly on the footing of the machinery and guides that turn out the table, because Gillow's tables are enlarged by filling the pieces in, that is quite clear. "I would remark, that according to the description, and the various figures of the drawings, it will be seen that the sections, *a*, *a*, diverge in parallel and radial guides." This seems to me to fix most strictly those parallel and radial guides, the guides and slides of which are parallel

Pratt

to each other, "the sections, *a*, *a*, diverge in parallel and radial guides, *d*, but it is not essential that such guides should be radial, though I believe it to be preferable, for it will be evident that the sections, *a*, *a*, may diverge from a common centre in directions not truly radial." What is the meaning of that? It is giving that limit which I say the patentee has a right to; that slight variation which is not to deprive him of his patent; that little variation which embodies the same principle of a radial guide; and although they are not truly radial, it means you are not to upset any patent by making some little paltry variation. "I would also remark, that it will be evident that the improved expanded-table shewn at figs. 1, and 3, is capable of assuming any intermediate size between those shown, depending on the size of the filling-pieces or leaves, *b*. Having thus described the nature of my invention, and the means of carrying the same into effect, I would remark that I do not claim,"—he does not say the various modes of carrying the same into effect, but he says, "I do not claim the various parts separately." He does not claim a guide separately, because a guide there is in Gillow's table; he does not claim a piece of polished mahogany separately; he does not claim any of the parts separately; "nor do I confine myself" not to the manner of moving the sections, but "to the precise manner of moving them." That again comes within the limit of the curved line, or strait line for radial lines; "but I do declare that my invention of an improved expanding table consists"—of what? Not in the surface; not in moving the surface of the table in a strait line, but "in constructing the same;" using again the word constructing; "so that the sections, *a*, *a*, of which the original, or unexpanded table, is composed, may diverge from a common centre, and the table be enlarged, or expanded, by inserting leaves, or pieces, in the openings, or spaces, caused by the divergence as hereinbefore described." Now it appears to me, my Lord, that these words, very large in themselves, are subject to the limitation which would be put on them by the Court, and is the limitation which is ordinarily put on them; that is, the limitation which will allow them to vary sufficiently, not to be interrupted by a modification that has no value in it at all; that the Court will say you are let out of that; you are not to be thrown open in that way. If there is

Jupe v.

any limit to be put on it, I should say this, strictly speaking, is a specification of a table having radial guides at all events, on which those must move, and that is the fair and honest interpretation of the specification. The table, if made in this shape, and if it had Mr. Gillow's frame attached to it, would be widened; it could only allude to the particular shape of the surface of the table, in its unexpanded shape; therefore, unless Mr. Jupe means to confine himself to his radial guides, he would be extending the patent of Mr. Gillow on for another fourteen years, and shutting out the public from the advantage they would have from Mr. Gillow's patent.

Sir Frederick Pollock.—My Lord—

Lord Abinger.—*Sir Frederick Pollock*, I will not trouble you on that part of the case, which respects the mere construction of the specification; that is to say, whether the specification embraces the *modus operandi*. If I am asked to give my opinion on it here, I should say I am rather inclined to think the witnesses are right, that the invention consists in merely dissecting the plane of the table, and so arranging the parts that they be moved out from a centre; on that you need not trouble yourself as matter of law.

Mr. Hill.—I understand your Lordship to reserve that for me.

Lord Abinger.—Yes, of course. The point I wish to present to your mind is this, and which *Mr. Rotch* has just now touched; Mr. Gillow's is a patent for a certain mode of elongating a round table, or a square table, no matter which; his mode is not confined to a round table or a square table; by a certain contrivance he lengthens it; the witnesses have proved that this same contrivance is applied also to widen it; that is what the defendant has done. If you have taken out a patent that prevents a man doing that, is the patent sustainable? in other words, is the mere mode of dividing a table into sections, the subject matter of a patent?

Sir Frederick Pollock.—I apprehend it is; and the best proof that can be given of it is this: Mr. Gillow's patent has expired these twenty years. My friend represents the mechanical world were impatient until that patent should expire, and then there was to burst forth a great many novelties. My Lord, it had expired for twenty years, and nobody had ever dreamt of making any application of any

Pratt

mechanical arrangement whatever to expand a table from the centre notwithstanding. My Lord, I apprehend the patent is taken out for this invention, which is perfectly new; we have called a dozen witnesses, almost all of whom are at this end of the town, who are all in great business; so far from there being any jealousy of the plaintiff, gentlemen in the trade have come, not as reluctant witnesses, but cheerfully to state the truth, that according to their experience it is perfectly new; they never saw a table of this sort before in all their lives, and I should think, that, as a matter of fact, they pretty well proved this point, that at least the result is something new. Now, my Lord, what was it that Mr. Gillow made? The principle of expanding a table, if I may so say, by inserting leaves in the centre of it, is very much older than Mr. Gillow himself. I dare say your Lordship probably can recollect as far back as when you were at college, and probably then would pay more attention to such matters than you would have done since; the mode in which tables then were lengthened, was frequently by having a table in two half round pieces which separated, the legs came out, and either flap pulled up in the middle, or pieces put in the middle, which is the same thing; therefore Gillow's patent was not for separating the two ends of a table, and putting pieces in the middle, that is about as old as round tables with flaps between the circular ends. Gillow's patent was this: for applying a particular principle in the way of lengthening the table, and it went by the name of the telescope table, because there were certain parts, one part was let into the other, and pulled out very much like a telescope; it went by the name of the telescope. Gillow's patent was not for doing anything with the table itself, or spreading out a table, separating the ends, and putting in pieces; Gillow's patent was not for the mode of doing that, the thing had been done before; but neither in Gillow's time, nor in any body's time down to the period when Mr. Jupe took out his patent, did any one suppose there was any mechanical application by which you could get a table to expand from the centre, and yet be a perfectly firm table. Now, what have we done? we do not ask to take out a patent for any part of the mechanical arrangement; on the contrary, as early as possible the patentee says, "I would remark, that there are various mechanical arrangements by which the invention may be

Jupe v.

performed." I have called witness after witness, persons connected with the trade, persons connected with machinery, with science, with patents, and with improvements, who one and all say, "until Mr. Jupe invented his table, the thing never had been done." Mr. Jupe says, "I have proved it can be done, and I show you how to do it; but there are various other mechanical arrangements by which the thing may be done." Why, my Lord, it is a very specious mode of saying "What does Gillow's table do?" Why, it parts across; well! and then it parts the other way. Why, my Lord, there is hardly a patent that ever came before a Court and Jury which would not have its effect entirely pulled down, if that sort of figure of rhetoric which diminishes the effect of the thing by putting a few questions, is to be applied. I will call your attention for a moment to *Lewis* v. *Marling**—in which a most important and valuable patent became the subject of consideration; your Lordship was counsel in the case; what was it? It was very easy to say you used to shear the cloth with rotatory cutters, but it was before that done longtudinally; that is, in the length of the cloth. What was the patent for? Why, for doing it across the cloth; it was easy to say, to be sure, "is there any mighty difference, instead of going from north to south, you go from east to west!" very easy to say that, but what did my Lord and the Jury say with the concurrence of all Westminster Hall; that that is not the mode in which a patentee is to be treated; you ask of practical men this question, it is very true that people did cut cloth longitudinally by those rotatory shears. Now the patent is taken out for doing that across the cloth; did any body even dream of doing that, could you, without some alteration or other, no matter how little, for it was very little, could you have done it across the cloth without some alteration; certainly not.

Lord Abinger.—It was for the mode of applying it.

Sir F. Pollock.—No! The man who first discovered you could do it across the cloth, as well as along the cloth, by some little alteration of the machinery, found out that which, in the result, turned out to be a most important invention; it made the cloth a great deal smoother and better by taking it in that direction; just so here, a man may have looked at Gillow's table for ever

---

* Vol. i. page 475.

Pratt

and ever without perceiving it, and, indeed, it would not be by the adoption of precisely the same machinery; you must have the two sets of working lines that are to take it first out and then across, you must have them by some mechanical ingenuity; using Gillow's patent would never suggest to you the mode of cutting it across and elongating the other way, it must be done by a different arrangement, and it would require considerable mechanical ingenuity to do that. Am I wrong in saying it is quite plain from all the evidence before your Lordship, that nobody, until Mr. Jupe's time, ever thought you could not only lengthen a table, but you can do more, you can split the table up into sectors, carry it out in different directions, and so construct the machinery that that table should perfectly answer the object of firmness, stability, and usefulness, in being expanded and contracted conveniently by common servants. Mr. Jupe found that out; he gives a particular mode of doing it; which is extremely simple. Another man says, there is a different mode of doing it. I am quite sure if it could be done by means of a groove, it could be done by some other way. Any mechanic who was applied to would say, "Yes, instead of taking the groove which is diagonal, you have two motions, one in one direction, and the other in another, you may produce precisely the same effect." Mr. Jupe knew that perfectly well, and any mechanic would have told him you cannot take out your patent for that particular mode, for the thing may be done in fifty ways; you must take out your patent for discovering that a table may be enlarged in that manner by a divergence from a common centre, and accordingly that is all he claims. He claims it in the beginning; he claims it at the end, and at the end he disclaims any part of the machinery—he says, "I do not claim the various parts separately of which the same is composed; nor do I confine myself to the precise manner of moving the sections, *a*, *a*, of the surface of the table; but I do declare that my invention of an improved expanding-table consists in constructing the same, so that the sections, *a*, *a*, of which the original or unexpanded-table is composed, may diverge from a common centre, and the table be enlarged or expanded by inserting leaves or pieces in the openings or spaces caused by the divergence, as hereinbefore described;" and accordingly the figs. 1 and 3,

Jupe v.

that are referred to, actually have nothing but the portions of the table put together, and the same portion of the table open without any statement there of grooves of any sort.

Lord Abinger.—What you have proved is this: the defendant has cut a table into four parts,—a round table into four parts: he has spread out those parts, and made them longer, and that by the same operation he has made them wider. The question is whether that is an infringement of your patent?

Sir F. Pollock.—That is the question. The first thing to inquire is, what is the principle of the plaintiff's patent? The next is, does the defendant do the same thing by the same mechanical arrangement, which is either a substitute for that which the plaintiff has adopted, or merely a direct imitation of it, or some equivalent which the commonest mechanic would be able to supply? If so, there is enough to go to the Jury, which is quite sufficient. I apprehend all the concurrent testimony shows such a thing was never done before, however simple it might be, and however it might appear to be a thought that should have come into the mind of a man from something that had been done before. If it never was done before, this is done now, and is done in a particular manner described; but the patent is not taken out for that particular manner. It comes to this question, is the plaintiff's a patent that can be sustained? I apprehend there is quite sufficient evidence to go to the Jury; the plaintiff's patent is sustainable. Then the next thing is what the defendant has done. Is it an imitation of the plaintiff's? Is it that sort of adaptation of known machinery so as to produce the same effect, which is either in substance the same, or what a Jury would properly be directed to say was an imitation? Under these circumstances I apprehend there is no ground for saying this case ought to stop. When my friend has called his witnesses, if he should call any, I think I shall have no difficulty in satisfying your Lordship and the Jury by and by, the plaintiff is entitled to a verdict.

Lord Abinger.—*Mr. Hill,* I think this a question for the Jury. The questions for the Jury are two; first, whether there is any novelty in the invention. It is confined now to what it is stated to mean, which is a mere invention of a mode of dissection of a table, and the

Pratt.

shape in which the pieces are cut. The second is whether or no you have infringed that invention. Those two questions are for the Jury; it is not for me to pronounce the verdict.

Mr. Hill.—May it please your Lordship; Gentlemen of the Jury.—His Lordship has, with great kindness, taken the trouble to dissect the questions into which this case has branched, and to bring it into a very narrow compass, and to bring it into a compass so narrow that it appears to me that, although certainly here are most eminent persons in attendance, that I should be most improperly taking up your time by calling them before you. It seems to me to resolve itself into a matter which you can just as well judge of now, from what you have before you, as if you had all the scientific men, and all the practical men in London brought before you, and examined one by one. Gentlemen, his Lordship has kindly reserved for another tribunal the question of what is the real legal effect of this specification, whether it be what one at first sight would suppose it to be, a claim for the table, and the mode by which that table is drawn out in the various ways in which it may be drawn out, or whether it is a mere claim for dividing the surface of a table into pieces of a particular form? I am very much puzzled, Gentlemen, how to deal with such a question as that. It's something like attempting to dance on a pin's point. There is a narrowness in it, and a futility, as it appears to me, in the whole matter so reduced, which makes it extremely difficult for me to know what to say to you. Gentlemen, I have asked some questions of the witnesses which appear to me to involve the whole argument, when it is a very old invention to divide a table into two parts, is it another invention to come to divide that same table into four parts? The same saw that divided it into two parts would divide it into four parts. The same quantum of ingenuity which divided it into two parts would be quite sufficient, I should think, to divide it into four parts, and so on into eight, or any other number that may be required. Why, Gentlemen, if this is the plaintiff's patent, what not only becomes of the specification, but of all the evidence we have had here before you to-day? My friend has cut off all the bed of his table; he has cut off all the stand; he does not ask you for a verdict on all those grooves,—on all that mode of elongating the sectors; that

Jupe v.

curious machinery which he so elaborately displayed to you; all that he has put now out of the case; he is beaten from fort to fort, and he takes refuge in this most extraordinary citadel—this common centre of the table, and there he hopes to be impregnably surrounded by his four sectors. Now, Gentlemen, really, as I before said, I find a difficulty from the clearness of the question—from its being self-evident, as it appears to me, I find a difficulty in the duty which I am called on to perform. Can any man in his senses say that there is any invention,—I will not call it any novelty,—but any invention in dividing a table into four parts, in dividing the plane of the table or the surface of the table, as the witnesses called it, into four? Is it the first time a round table was divided into four parts? that it should be first bisected in one way, and then bisected in another? Is that an invention? Why no, Gentlemen, the invention was the invention of Gillow; the real invention so to divide the table that you might separate it, and put in filling-up pieces or leaves, according to the openings you made in it. There was some invention required for that. My friend says, "it has been done before Gillow's;" but inasmuch as it had been done according to that mode, so much the less praise to Mr. Gillow. If you do not praise him, you must his predecessor; there was the thing invented by somebody; there was somebody who had made a most convenient mode of separating a table into parts, and expanding it because of that separation; then it would be filled up. Then my friend says, "there is great merit in this subdivision." Now what is it? Gentlemen, I am not interested in denying that there is a merit in this invention, as I believe it to be. As to the question I do not think I am much interested in weighing and settling it with you. A mode by which you make all the sectors of the table spring out, so that it shall retain something of its circular form by means of radial grooves, and admitting of a sort of machinery by which simply by turning the table round, you make these sectors go out just as far and no farther than you choose, may have some merit about it, for aught I know. I am not interested in inquiring, because we have done nothing to interfere with that; we have put in no such machinery; we have no radial grooves at all. If this is a useful invention, and Mr. Jupe has not the benefit of it, why it is from two causes: first of all, that he has not constructed his speci-

Pratt.

fication so as to claim that which is the real merit of his invention; and secondly, for some reason I do not know. It is not because we have stolen it from him, because the whole evidence shows we have made no such table of this kind,—we have made no table where the sectors shoot out into radial grooves, or any approach to radial grooves, or by turning it round and using any machinery, the sectors may be all made to move together. Our table, on the other hand, is most distinct: it does not grow out of his at all; it has no relation to his; it proceeds step by step on a different principle, from the beginning to the end; it commences from Gillow's; it uses only the means which Gillow's has pointed out, and you come to an end which is in most respects essentially different from the end arrived at by the plaintiff. Gentlemen, you see on the plan which the defendant has adopted, the table may be made, within reasonable bounds, of any length you please; is that so of the plaintiff's table? Certainly not; Jupe's table you cannot, if you have a table which is made to expand in a circular direction at one time, you must have it expand in a circular direction in the other, so that you can never gain length but at the same time gain breadth; you see I am pointing out some of the differences, there are a great many—I point them out for this reason, to show you that even if the principle did arise in the mode of construction—if the principle was not that miserable one which it has been pared down to be, even then there is no moral case—putting the strict law of it aside for the moment—there is no moral case against the defendant, because it is not a case in which a defendant, a person using another man's invention, places it before his eye, and only tries how he may avail himself of the intellect of the other man in such a manner as to disguise the fraud which he has been committing. It is perfectly clear here, the defendant's springs from premises altogether different from that of the plaintiff, if he has those premises then he comes to conclusions altogether different also. Why, Gentlemen, it has been said it is easy to run down any patent by the mode in which I put this before you. I do not see how it can be easy at all. I do not see I have given in the slightest degree an unfair description of the table. I say, here is Gillow's table, you have drawn it out, and suppose you had never heard of the plaintiff's table at all, there had

Jupe v—

been no such thing, why on studying Gillow's table should you not come to the result that by putting slides, which you have before your eyes, to each quarter of the table at right angles to these slides you should get what you want, not this expansion in a pure circle, which if there be any use in it I cannot find it out, but that you want the plain common sense object of being able to give breadth; just as you have been able to give length; it appears to me, I am now speaking on the moral case, that if the defendant had seen and studied the plaintiff's model, that the effect of such study would have been to drive him further from the end to which he has arrived, for he would have been confined between these radial guides, which seem very well in the first instance, and perhaps calculated to produce the effect, but which from their being confined in their operation so as to confer breadth in the same proportion as they confer length, to spread out equally all sides or nearly so, to enlarge the circle from the centre, are found in practice to be much less convenient in giving variety of form than that of the defendant's. Now these may be made of many forms, all of them useful. I have shown you how you may have a regular oblong table, not that thing of shreds and patches which my friend pointed out as being manufactured for the mere sake of getting something which was to look like an oval, which was to be neither circular nor oval nor anything else, but a handsome and elegant shaped table you may have, and simply by these means, which are so easily used and which it is clear it would be so difficult to put out of order. Now, Gentlemen, is this the case of where you find a defendant has looked about to find some other means, generally inferior to those used by the patentee, for the purpose of disguising his mode of proceeding? No! Here I begin with means altogether different, means furnished me by a person with whom the plaintiff has nothing to do, and I use those means to produce ends and conveniences in themselves, but which the plaintiff cannot produce by his means; does that look like a piracy? Gentlemen, what, then, is the ground on which my Learned Friend asks for your verdict to-day: what does he say—is it the invention which all the world was led to suppose was discovered in his specification?—No! Gentlemen, where do you find the remotest hint of any such table as the one we have made in the specification of the plaintiff; the specifica-

Pratt

tion is elaborate enough to lead you away from this, which is the best form, but there is no assistance to find it at all. Twenty-three figures has the plaintiff in his specification—in every one of them the same radial action; and when he tells you you may depart from that radial action, he takes care to say you may have an action not purely radial—you may go not precisely in the way: but does he even hint—does he even throw out the idea, "I have done this by a radial action—you may do the same, and better, by two motions at right angles with each other." And this leads me to what my friend seems to think is the great point for him in his case, and which he took refuge in, after having in vain essayed many others, and been driven out of them. It is this—my Learned Friend says, these are the same tables—he says that they are the same tables because, although I produce my effect of lengthening and broadening, which effect, when put together in one particular instance makes a circle,—I produce the effect by two motions, yet he says, "I will show you it is in fact the same thing as the defendant's—that I go along the cord of the arc and that your's goes along the sine and cosine."

Sir Frederick Pollock.—The radius.

Mr. Hill.—The radius and the cosine. Very well—now is that so? My friend goes on to say that the two motions are mechanical equivalents; many things will produce the same effect to another, it does not follow every person who has invented one has therefore a claim on the other. It is very true that they can say that the equivalent has been chosen for no other reason than because, during the existence of the patent, the defendant did not dare to take the plain, and straightforward, and natural course; is that the case here? I say no! I say these double motions are not, in the true sense of the word, mechanical equivalents for the motion of my friend. I say they are a great deal more than equivalents. I say they are a much better motion. The principle of our table is, if you choose, you may have it a mile long, and six feet broad, that is perfectly clear, and it must be so, and therefore, I say this double motion gives you infinitely more than theirs can have by all their machinery—by all their twenty-three figures, by all this long specification put together; the simple idea springing not out of Mr. Jupe, but from a consideration of the table of Gillow, that

Jupe

doing just what Gillow had done, that gives all we had required. Therefore, Gentlemen, the question before you is this,—Are you prepared to say that any man is to have a patent who merely does what Mr. Gillow has done before—cuts the top of a table so that the parts may be separated; it is true he has cut it into a greater number of parts than Mr. Gillow, as far as I have heard, himself cut it into. Somebody may rise up and cut the table into a much greater number of parts than Mr. Jupe; would he have a patent for what he has done? If not, why should this gentleman? Gentlemen, there is nothing to be so much guarded as the rights of patentees, who, giving a fair, simple, straightforward account of their discovery, and standing before Juries on that account of their discovery, come to complain of those who have been using their invention; but on the other hand, if there is danger in that view of the case, I will ask you is there no danger that a patentee shall bring forward a specification which requires all the legal acumen which has been applied to this, to find out that it means something very different from what it purports to be, and for why? Why, for the purpose of grasping hold of something which it is perfectly clear, never entered into the mind of the plaintiff himself to invent. But it is perfectly clear, if there is any merit in this adaptation at all, it is a merit which the defendant has a right to, and which the plaintiff by this proceeding seeks to pirate. Is he not using this machinery of a patent for the purpose of laying hold of our invention, which it is very clear until it was made and exhibited to him by the defendant himself he had never dreamt of. Why, Gentlemen, if he knew the two motions at right angles would produce not only all the effects he has produced by his complicated arrangement, but produces many others infinitely beneficial, why did he not say so? Can you imagine any other reason than because he did not know it. Then shall he be permitted to come forward, and to claim that which, it is perfectly evident, had never entered into his mind for one moment. He has had a sufficient disposition to claim it; he has claimed here his servant's invention, as it appears to me at all events it cannot be doubted, he has put it into his specification, he has taken a great deal of trouble to lay before the public in his specification an invention not of his

Pratt

own but of his servant's; he showed there he was not particularly nice on that subject, and if he had known of this invention, why should he not have put it in, why instead of all these figures which he has put here, why did he not say my invention consists of cutting up a table in the manner described by the witnesses, and whether you draw it forth by guides, radial-guides, or whether you take a motion along one line, and then, when you have got to the end or as far as you choose to go, you can turn at right angles; why did he not say in his specification that is my invention and that is the way I specify? My friend set out with saying, I should tell you my client's table was much less useful than the table of his client, and he said I should do it in order to cut down the piracy and to show the tables were not alike and therefore there was no piracy. Gentlemen, I shall do no such thing, I show my client's table is infinitely better and infinitely more useful than his, proceeding fundamentally on better principles, those principles from the beginning to the end work out better effects, but in so doing they use no information at all that was given to the defendant by the plaintiff, but that, proceeding upon premises utterly different, we very naturally travel by a different road to a different conclusion.

Lord Abinger.—Gentlemen of the Jury, this is an action brought by the plaintiff for the infringement of a patent, which has been the subject of so much of your attention. The specification is for an improved method of expanding a table. It is of no importance whether the table be round, or square, or oblong, whatever the shape is; the plaintiff says his patent is applicable to all shapes, and it consists of an improved method of expanding any table. The specification has been read to you; and the first witness examined, Mr. Carpmael, a gentleman of great intelligence and experience in the construction of patents; he, as I understand, put it on the ground that the invention consisted of three parts; and that I may not do injustice to the plaintiff's case, I will read from the note which I took, what it was he said he conceived the invention consisted of. He conceived it consisted of this. "First, I consider part of the plaintiff's plan to be, that the plane of the table is divided into sections, from the centre: I do not consider this alone as novel. Secondly, that the sections shall diverge or recede from a common

Jupe v.

centre, so as to produce spaces between them; and thirdly, that those spaces shall be filled in with additional pieces from the common centre. I consider these two last as novel." He does not consider the division of the table into sections having a common point in the centre, as novel.

Sir F. Pollock.—Your Lordship will remember that he said, the only instance the other way was the table that folded in flaps.

Lord Abinger.—He considered the novelty consisted in the combination of that form, with the recession from the centre towards the circumference, and filling up the interstices with other pieces, and this, in fact, is the extent of invention which the plaintiff is now said to claim. Now, undoubtedly, the case has, at this period, assumed a much narrower circumference than it did at one period, because I apprehend a great portion of the examination of the plaintiff's witnesses, originally was for the purpose of showing, that the motion, by which the sections of the plaintiff's table were made to recede from the centre, was essentially the same as the defendant's, because, you will recollect, the witnesses were asked very much whether one was not a mere diagonal motion in one line, the other two motions in two lines. And several witnesses were examined very fully on that subject, which certainly led me to think, and very probably it did you, that the mode of carrying the contrivance into effect was considered to be an imitation of the plaintiff's, because substantially it was making two motions, which the plaintiff effected in one. Now it turns out that that is not the matter of complaint, that the plaintiff claims nothing as to the mode by which he does it, but he confines his patent simply to the mere form of the sections and their recession from a centre, and that by whatever expedient the sections are removed; if you move them by the hand on a plain frame which you may make for the purpose, and then fill up the interstices which you make, that that is the patent, and the point therefore, certainly, is very much narrowed by that mode of considering it. It is alleged by the defendant's counsel that the specification is larger than that; he alleges the specification, when you come to consider it minutely, actually claims the mode and mechanical means by which the motion is occasioned. If such were the

Pratt

case the plaintiff must have been nonsuited; but as I conceive there is some doubt on that, and as it turns on the construction of the specification itself, and not on the evidence that relates to it, I have reserved that for consideration hereafter, in case you should be of opinion the plaintiff is entitled to your verdict on the other matters that are now before you; and the first is, whether the claim which the plaintiff makes to the mode of dividing the surface of the table into sections is an original invention. Is it novel? Now, certainly, you have had a considerable number of witnesses, who are acquainted with the trade and cabinet-makers, and two or three most respectable engineers who say it is novel to them. They say dividing the table into sections which are parallel to the radius of the circle, and enlarging the table by making those sections move from the centre, and filling up the interstices, is new to them; they say so, they admit the table was divided before into halves. A round table was divided into half, a long table had several pieces, whether round ends or not, and a middle, and, perhaps, two or three more pieces and the flaps; but they say this mode of dividing it is new to them. Now let me suppose, Gentlemen, therefore, in order to illustrate really the nature of the case, that some other man was now to say, "I will take a circular table," and suppose the circular table was now before you, "and I will describe in a word the centre of the circle and a small square, that square shall be stationary, to consist of one piece, the other pieces shall be pieces that fit in from the circumference to that square, and if you examine them you will find those consist of no less than eight pieces, four of which would be parallelograms; the other four would be triangular." Now I should like very much to know whether the plaintiff's patent is of that nature as to preclude any man from adopting that mode of dividing tables. Probably that mode has not been suggested before; but you observe in that mode the centre-piece would be stationary, and the pieces which recede from it not all in the shape of triangles, but some of them in the shape of parallelograms; that might be called a recession from the common centre. It might. We are not to consider a thing is new because new words are given to it. In point of fact what the plaintiff claims is this, that he has divided the surface of his table into more than two parts,

When question on Specn
is matter of legal
construction rather
than application of
evidence thereto: then
it is for Court.

New words don't
make new things.

Jupe v.

because three would answer his purpose. Three would make triangular parts; and having divided it into more than three parts, he says any mode by which you make those parts recede from each other, and from the common centre of the table, and then fill up the interstices, is the novel invention. Now, certainly, the witnesses have stated to you that opinion. You are not bound to give your verdict merely on the opinion of witnesses. If you think, on examining the subject, that, in point of fact, there is nothing that can be called novel in it, it is not because witnesses say, "We never saw one before" that therefore it is novel in the sense in which a patent is taken out for a novel invention. It might be said, if a man had invented a mode of cutting cloth with a pair of scissors, that it was a novel invention to cut a piece of paper with it. You might have twenty witnesses say they never saw it applied to cutting paper; but I should not conceive it was a novelty so to apply it. If a man had found out an instrument to divide an orange into a dozen pieces, and another man were to say, "I can cut it into twenty with the same instrument," I should not have thought that a novel application, although it might produce a result that had not been produced before; and I should have thought that within the reach of every man's genius, and was not therefore necessarily a novel invention there would be no improvement of a manufacture. I only make these observations to you with a view to invite you to exercise your own judgment and reason on it. If your reason and understanding goes along with the evidence of the witnesses, and you think they are right when they say (and I have no doubt they are stating the fact) that such a thing never occurred to them before,—they never knew it before, and on that account you think it novel, why, on that point the plaintiff would be entitled to your verdict,—that the invention is a novel invention.

No! it is a "double use."

Sir F. Pollock.—Not only scientific men, but we called six or eight practical men.

Lord Abinger.—I said so: I said several cabinet-makers, and several scientific men. The Learned Counsel for the defendant tells you there may be a host of cabinet-makers who would say a different thing. That is matter of conjecture only. You must take the evidence as given to you. All I say is, that I should not suffer my under-

Pratt

standing to be affected on that question, whether the thing was novel or not, by merely the repetition of a great many witnesses saying it was new to them. I invite you to exercise your judgment on it, and if your judgment is in accordance with the witnesses, and you think them likely to be right, I should be as much satisfied with your verdict which says it is novel, and, as they say, useful. Now the next question is this, which is the one of great importance;—Whether the defendant has violated this patent? What has the defendant done? It is proved that the defendant has applied a well known process (said to be invented, or if not invented adopted by the late Mr. Gillow, an eminent upholsterer), for prolonging a table, to the widening a table. That is what the defendant has done; that is clear from all the witnesses before you. Every one of the witnesses who have been examined on the subject have stated that the mode by which the defendant does this is not the mode in the plaintiff's specification; nor is that material, nor does the plaintiff claim that mode; but he has done it by Gillow's method, and therefore his violation of the patent consists in this, that whereas Mr. Gillow had cut a round table into two parts, and has taught you by some machinery to draw it out and make it longer, the defendant has said, "I will also cut it the other way, draw it out, and make it wider and longer by the same process." The plaintiff says he cannot do that without infringing his patent. You may make a round table either of one piece, or you may make it of several pieces; but according to the plaintiff you cannot make it of several pieces, all uniting in the centre, and make them loose so as to draw them out, because that was never done before, that is a mode of cutting out a table that belongs to me only. But you may cut it into square pieces, and as many pieces as you please, and widen it. Mr. Gillow has a right to say, "God bless me, I found out a mode of cutting a table into two, and separating it into two pieces —shan't I cut it into four, and separate it into four in like manner?" Is that an infringement of the plaintiff's patent? "It is the adoption of my patent, and carrying it to a rather further improvement, still it is the adoption of my patent." Now that the defendant also says "is not an infringement, because I have a right to pin the plaintiff to the very letter of what he claims to be his patent, and it is, that the pieces are to recede radially from a common centre." Now he (defendant) says, "I do not make them recede radially from a common centre. The first thing I do is to cut the table in two parts, and I draw them out by Mr. Gillow's patent, and you cannot complain that is a violation of your patent; and when the table is so formed, I then cut each of the other parts into two, and draw them out by Gillow's patent in the same way." He therefore says, "I do not divide the table into four pieces, and make them recede from a common centre. I divide the table into two pieces—prolong it by Gillow's patent, and then divide each of the two pieces into two, and make them recede—that is the operation I perform—that is not dividing it into four pieces, and making them recede in the sense you say you made your invention." That is what the defendant says. I must own, Gentlemen, and I beg the verdict may be yours, and not mine—that I feel a great difficulty in coming to the conclusion, that a man has infringed a modern patent, because he has applied Mr. Gillow's patent to widen the table as well as lengthen it. I feel great difficulty in that, and that is the evidence of all the witnesses in the cause as applicable to Gillow's patent. Undoubtedly in one sense, if you take a round table, or a square table (no matter which), and cut it into four pieces, and the lines bisect each other all in the centre, and then you draw the pieces out, and then fill up the interstices, you do make a table that recedes in that fashion; but if you draw the two pieces first—the widening, the witnesses admit then you destroy the common centre, and then if you draw the other two out again, and cut them in two, they admit there is no common centre for those two. The question is whether or not, because it is originally divided into four (instead of being first divided into two, and drawn out, and then afterwards divided into four), whether that makes a violation of the patent? Gentlemen, this is a matter of fact for your consideration. What the defendant has done, is to apply Gillow's supposed contrivance, or invention, to widen the table, as well as lengthen it; that is what the witnesses say. Gentlemen, the patent of Gillow has expired a good many years; if you are of opinion this is an infringement of the plaintiff's patent, you will say so. Those who have gone into particulars have all stated, the machinery, the *modus operandi* of the two, is dis-

Pratt.

similar; that you see is immaterial; but they go on further and say, what he has done he has done by the application of Gillow's patent, to widen the table, as well as lengthen it. Gentlemen, it will be for you to say, first of all, whether you think the mode of cutting out this table into sections is novel and useful? and secondly, if it is, whether the imitation—whether the table made by the defendant, is an infringement of that patent? If you think the affirmative in both; you will then find for the plaintiff; and I suppose the damages will be nominal.

Sir F. Pollock.—Yes, damages nominal.

Lord Abinger.—If on the other hand you find for the plaintiff on the one, and for the defendant on the other, say so, and let me know decidedly what your verdict is on each, as there are several issues.

The jury having been absent about twenty minutes, returned into Court, and—

The Foreman said,—We find a verdict for the plaintiff; the invention being both novel and useful, and that it has been infringed by the defendant.

Lord Abinger.—Verdict for the plaintiff.

Mr. Richards.—Verdict for the plaintiff on all the four issues.

Lord Abinger.—Certainly; for the plaintiff on all the issues, with liberty to move on the specification.

JUPE *v.* PRATT.

In the Court of Exchequer, before the Lord Chief Baron (Abinger), Mr. Baron Bolland, and Mr. Baron Alderson.—January 14, 1837.

Sir F. Pollock appeared for the plaintiff to oppose the rule obtained by *Mr. M. D. Hill*, to show cause why the plaintiff should not be nonsuited, or a new trial had on the point reserved in respect to the legal construction of the specification enrolled to the plaintiff's patent.

The Lord Chief Baron having read his notes of the trial—

Sir F. Pollock said,—My Lords, instead of the word nonsuit there should be read a rule, to show cause, why the verdict should not be entered for the defendant upon one or more of the issues raised at the trial. My Lords, I need not occupy a moment in stating that since the new rules have been adopted a nonsuit can very rarely occur, and I should

Jupe

say never can occur, when a party has incurred considerable expense.

Lord Abinger.—Unless all the pleas are proved.

Sir F. Pollock.—I will just see what are the issues on which alone my Learned Friend can possibly ask to enter a verdict. On the issue of not guilty, which is the first, he cannot ask your Lordships to enter a verdict; nor can he on the point of its not being the plaintiff's invention, because that was distinctly put to the jury, whether he was the first inventor of it or not, the jury have found that he was. Upon the third, that he did not describe and ascertain the nature of his said invention, upon that point I concede it was reserved to my Learned Friend to apply to enter a verdict for him. On the fourth, which is that it is not a new invention—

Mr. Baron Alderson.—Where is the difference between the second and the fourth: one is, he was not the inventor, the other, it was not a new invention.

Sir F. Pollock.—The second is, admitting the invention to be new, the plaintiff is not the inventor; the fourth is, admitting the plaintiff to be the inventor, the invention is not new.

Lord Abinger.—Very much the same.

Sir F. Pollock.—In this case it would pretty much resolve itself into the same question. My Learned Friend's other point is in the rule for a new trial. On what precise point that was granted, I am only to collect from what my Learned Friend says to-day as to his third point, namely, that the defendant's table was not a piracy of the plaintiff's patent. My Lords, the outside of what my Learned Friends could ask, on that head, is for a new trial on payment of costs, the jury having distinctly found that the defendant's table was a piracy; and, my Lords, I will dismiss this, because in the course of the argument of the rest of the matter, I must advert to what substantially would be raised on that issue. My Lords, I will dismiss this with a word, any formal notice of it is somewhat too late, for my Learned Friend, after thinking that he had a fair chance of the verdict, as the cause then stood, to keep back all his witnesses, to try his chance without calling any witnesses, who were there in great numbers for the purpose of proving, in their judgment as scientific men, that the principle of the two tables was different,—I say it is rather too much for my Learned Friend to

Pratt.

rest on his speech and observations, and what I suppose he might expect to be the benefit of an intimation which was given from the Bench, (but which of course could give no more than this, that my *Lord Abinger* threw out then, for the advantage of both parties, the view he took of the case, and of the case as it then stood); my Learned Friend chose to take the hazard of the battle as it might then be fought. I think he cannot now propose to pay the costs and get an opportunity of calling all those witnesses that he declined calling on the former occasion. So much for the new trial. Now, my Lords, with respect to entering a verdict for the defendant upon the third issue. My Lords, I am sure that his Lordship who tried the cause, even if at the moment I did not give the best answer, or if I gave a very inefficient one—a bad one,—I am quite certain that the justice of the case will not be allowed to suffer if upon a calm and fair inquiry as to the merits of the case, now here to-day before all your Lordships, it shall turn out, as I think it really will, that with the finding of the jury, there cannot exist a doubt of the plaintiff's title to recover. And, my Lords, on the fourth issue, and indeed, all the issues are now out of the question, except the third, I must entreat your Lordships in order to go along with me in my argument, to consider this, that the question is to be argued now, exactly as if I had traced to the defendant the making of a table identical with the plaintiff's.

Mr. Baron Alderson.—The question is, what is it you claim under your specification? ascertain that, and the rest of the case follows.

Generally the imp
question

Sir F. Pollock.—With respect to Gillow's patent and the mode of constructing tables, I apprehend, whether it was a patent, or a method, is quite unimportant. I take it for granted the jury imparted into the consideration of the question all their ordinary knowledge of the common things of life. For instance, now, I apprehend, I have a right to advert to the fact,—I do not know whether it was in evidence, but apart from its being in evidence, I should have the right to advert to the fact, before this patent there were round tables that were enlarged by building round by rims. It was discovered in practice that that was very inconvenient. The mode of doing that was by driving out pieces in order to support an additional rim. Mr. Jupe, the plaintiff, conceived that a

Jupe

mode might be adopted by which a new table should be constructed not by expanding it at the edge, in the way all round tables had been expanded before, but by opening it from a centre in any manner in which that can be performed, and that is a novelty, opening it from the centre, and then filling the spaces; every witness said he had never seen that before.

Mr. Baron Alderson.—It would not be a true circle after all.

Sir F. Pollock.—Certainly not. The best proof that can be given of the merit of this invention is, that hundreds of tables of this description had been sold within a short time. Mr. Jupe having discovered that the thing could practically be done, having ascertained that what may be called his principle could be performed, and that there was a mode of doing it, he took out a patent. Now, my Lords, I apprehend that the fair mode of looking at a patent, and the specification, is to inquire what is the spirit of the invention. My Lords, the spirit of an invention must always be the principle, or something very like the principle, but the spirit or principle of an invention must be embodied in some mode or method of manufacture, because without that it is admitted on all hands, you cannot take out a patent for a principle. But although the law says undoubtedly and correctly enough, that you cannot take out a patent for a principle, that is for a barren principle, when you have clothed it with a form and given it body and substance in which the principle may live and produce the benefits which you claim to result from it; why then, my Lords, although you cannot have a patent for a principle, in substance you have a patent for the spirit of your invention, for if any other person comes and clothes the spirit of your invention with a different body, and puts that principle in use in any other shape or fashion, it is always to be a question for a jury, whether, however different in appearance, in shape, in form, in manner, in mode, in method,—whether the matter complained of be or be not substantially an adaptation of the plaintiff's principle applied with the same view to answer the same end, and imitated in substance, whatever difference there may be in point of form. My Lords, I cannot give a better illustration of this than by referring to a case, in which I had the honour to be engaged under the auspices of the present Lord

Pratt

Chief Baron, who presides now in this Court. I believe I am correct in that recollection. It was about a machine that was called a gas-meter.

Mr. Baron Alderson.—It was for measuring the quantity of gas that was supplied to every individual, in order that they might not take it without its being known.

Sir F. Pollock.—I believe I am right in thinking your Lordship was in that case.

Mr. Baron Alderson.—I can certify that to you. There never was a more instructive case than that. I remember very well the argument put by the Lord Chief Baron, who led that case for the plaintiff, and succeeded. There never were two things to the eye more different than the plaintiff's invention, and what the defendant had done in contravention of his patent right. The plaintiff's invention was different in form; different in construction; it agreed with it only in one thing, and that was a wheel moving in the water; and the gas passing through it, the wheel was made to revolve. The scientific men all of them said, the moment a practical scientific man has got this principle in his head, he can multiply without end the forms in which that principle can be made to operate; and the argument of my Lord Chief Baron then was—

Identity of invent
does not consist in
identity of form
but is ~~only~~ to be looked
for in the funct
sustained by the pa

Lord Abinger.—That that was a principle to a certain extent.

Mr. Baron Alderson.—The difficulty which will press on you, and to which your attention will be called is this; you cannot take out a patent for a principle; you may take out a patent for a principle coupled with the mode of carrying the principle into effect, provided you have not only discovered the principle, but invented some mode of carrying it into effect; but then you must start with having invented some mode of carrying the principle into effect; if you have done that, then you are entitled to protect yourself from all other modes of carrying the same principle into effect, that being treated by the jury as piracy of your original invention. But then the difficulty that will press on you here, is, does the evidence show there to have been any mode of carrying the principle into effect at all invented by you? That is the difficulty which seems to press.

Definition of patent
principle.

Sir F. Pollock.—I was citing that case only to get at a principle with which to start. I take it, therefore, I may assume from the authority of that case, from your Lordship's authority now, that if a man invents, or adopts a principle, and embodies that principle in a mode, that it is then a question for the jury, whether any other mode of doing the same thing, is or is not a piracy of that which he has invented. Now I proceed to consider what this is. My Lords, the title of the patent is merely "an improved expanding table," and I say, my Lords, that that is a very correct title, whatever was the object of the inventor, whether to secure to himself the mere surface, or the mode of moving the parts, or any thing else.

Mr. Baron Alderson.—I wish you would separate it; the issue you have now to maintain is, that there is proof of your having invented some mode of carrying the principle into effect. That is the question.

Sir F. Pollock.—My Lords, the evidence is distinct, that this was the plaintiff's invention, with the exception of a particular mode which he has added in addition, which I admit is not his invention. He says, "The object of my invention or improvement is to construct an expanding table, that the sections which compose the surface of the original or unexpanded table may be caused to diverge from a common centre." And that is all he states, and that is all his invention.

Mr. Baron Alderson.—That is the object of the invention.

Sir F. Pollock.—The object of the invention, properly speaking, was to improve the construction of a dining table; that is the large object, but the special object is this; this is the invention—the object of my invention or improvement is so to construct an expanding table, that the sections which compose the surface of the original or unexpanded table may be caused to diverge from a common centre. There was a great deal of carping on the part of my Learned Friend at the trial about the common centre. And I think my Learned Friend, when he moved for the rule, said that a table in two pieces diverged from a common centre.

Mr. Hill.—I say so now.

Sir F. Pollock.—I must say it is an abuse of language so to speak.

Lord Abinger.—He says every circle has a centre.

Sir F. Pollock.—Does my Learned Friend mean to say, that is divergence at all; is that diverging at all? if it is, is it diverging in the sense in which every man of com-

Pratt.

mon understanding must construe the intention of the plaintiff? No man can look at Gillow's patent and say that they diverge from a common centre.

Mr. Baron Alderson.—They do not part from a common centre.

Sir F. Pollock.—They part from a common line. There is no diverging at all.

Mr. Baron Alderson.—There is no centre.

Sir F. Pollock.—They separate from a common line.

Mr. Baron Alderson.—They do not diverge from a common centre.

Sir F. Pollock.—There is no divergence of two lines.

Mr. Baron Alderson.—If you take them and cut them cross ways, then they depart from a common centre.

Sir F. Pollock.—But my friend gravely stated, when he addressed your Lordship before, and to-day he has repeated, not merely to me, but, as your Lordships may have heard him say, I mean—

Mr. Hill.—I do say, and mean to say it very gravely and very strenuously by and by.

Sir F. Pollock.—This is open to the inspection of every body. I can only say, my Lords, supposing my Learned Friend shall so twist language, as to make your Lordships believe that is a divergence from a common centre, I ask, can your Lordships believe that is what the plaintiff meant by the expression; or that he meant to include that because what a patentee means, if you can collect that from his instrument and specification, which he obviously means, is what he is bound by, and your Lordships do not look at a specification either with the acuteness of lawyers, with the criticism of scholars, or with the accurate investigation of philosophers: you look to it as men of business, as men of the world; you read it as gentlemen disposed to learn from that, and the surrounding evidence, what it was that the party meant, and what he meant was that which he is bound by, and not merely that which he may happen to have said.

Mr. Baron Alderson.—If I were to define what diverging from a common centre would be, I should say, that species of motion that would be produced, if all the particles were capable of moving freely by the centrifugal force.

Sir F. Pollock.—One can hardly conceive a divergence from a common centre, unless there is a common centre

Jupe v.

to diverge from. I think it is a waste of time, it is hardly creditable to the administration of justice, that I should occupy your Lordships' time further on this point. I say in grammar it is wrong; but if in grammar it was right, in good sense and justice and honesty, it is worse than wrong. The question here is, not whether it can be said we have included too much, because the parting of two pieces is diverging from a common centre, as this, in defiance of the drawings which accompany the specification, where no such thing appears; nothing like it; but it is explained; there is the drawing of one table, here it is closed, and so on; here is a section of the drawing of other modes, by which the invention can be carried into effect. The only evidence I took down at any considerable length, was, I think, Mr. Carpmael's: he says, that there are three points in the plaintiff's table; first, that the original table should be divided into sections, pointing to or having a common centre; second, that they ought to diverge or recede from that common centre, so as to leave spaces between; and then those spaces are to be filled in with filling pieces: that he says is the invention. My Lords, I know very well your Lordships are not to be governed, in looking at a specification, by the evidence of any scientific man. If scientific people come to sustain a bad specification, or if they come to damage a good one, your Lordships are to take the specification, and read it for yourselves. And I say, my Lords, then the first thing is this; ask this question, what is the spirit of this invention? I say, my Lords, that the answer any man must give on reading the specification is this; the spirit of the invention is to construct a table, the surface of which shall consist of pieces, which pieces shall diverge from a common centre, using that expression in perhaps the loose and inaccurate, but still very intelligible, sense, and then that there shall be filling pieces to fill up the interstices. That is the spirit of the invention; when you have got that, as Mr. Jupe says himself, "having thus generally stated the nature of the invention, and the object to be obtained, I would remark, that there are various mechanical arrangements, by which the invention may be performed." Do they lay any claim to the mode in which that is to be done? He was bound to give you some mode of doing it, otherwise his patent would be for the principle alone. He must show you how to do it; but he says, I do not claim anything as to the mode of

Pratt

doing it. If he had merely said that without pointing out the way, so that a practical man, taking the specification, had no mode put before him, by which he could do it, however brilliant the invention, however illustrative of the genius of the person who had discovered it, it would not have been sufficient. Now, my Lords, *Mr. Baron Alderson* just now called my attention to this fact, the word "object" was used. I should like to call Mr. Baron Alderson's attention, if he will allow me, to this circumstance. "Having thus stated generally the nature of the invention, and the object to be obtained, I would remark, that there are various mechanical arrangements, by which the invention may be performed." Showing the spirit of the invention to be the separating into parts, and their diverging in that way, and the interstices being filled up, and then he says, "depending partly on the taste of the individual for whom a table is to be constructed; I, therefore, propose to describe the different arrangements of parts which I have made and find to answer, and which, from experience, I can state, will give full effect to my invention or improvement." Now allow me to call your Lordships' attention to this, "which from experience, I can state, will give full effect to my invention or improvement;" making a total distinction between invention or improvement, and the means by which the effect was to be given. My Lords, I really do submit that, if the patentee or the gentleman who assisted in preparing our specification, had been aware of the objection to be taken to-day, and had framed it with a view to this argument, he could hardly have taken more pains to satisfy the Court that the invention was the separation from a common centre, and filling up the interstices, and that the mode in which it was to be done, was not that for which he claimed his patent. But, then, he says, "My improvement is applicable, not only to the precise arrangements hereinafter shown and described, but to various other forms of the same table, provided the property of expanding the surface of the original table, by causing the sections to diverge from the common centre, be retained, and the table be enlarged or expanded by inserting leaves or filling pieces in the spaces caused by such divergence, in the manner hereinafter mentioned. These different forms or shapes must depend on taste, and so must also the details of the mechanical arrangements which govern

Jupe v.

and retain the sections of the surface of the table securely to the desired positions." My Lords, really, I beg here to ask the Court whether it is possible for a patentee more distinctly to have stated what he claimed. He says, what I claim is the making of a table, the surface of which shall be in sections, which sections shall diverge from a common centre, and which shall be made a large table by filling up the interstices, and as the details are in part mine, I will show you how it can be done, and will give you a piece of mechanism, my servant has given me, but I claim nothing about that; all I claim as the spirit of my invention, is, separating the table from this centre, and filling up certain spaces so left with introduced parts. Then, my Lords, he gives a mere description of the drawings. Now, my Lords, I will not occupy your time by reading this over, it does not appear to me any part of that throws the least light upon the invention. My friend complained, and said, if that was all you meant, you might have put the specification into a nut-shell. Not so. However plain, he says, the principle may be, and however obvious when so given to the public, still the patentee must take care to lay it before the public in a practical shape, though he assumes to himself nothing in respect of that shape, almost all the rest of the—

Mr. Baron Alderson.—You put it very much on the same footing as *Lord Chief Justice Eyre*, in the case of *Boulton* v. *Bull.**

Sir F. Pollock.—That, my Lord, is shortly expressing the whole matter I am going upon, and I feel confident that your Lordships will read this specification for the purpose of ascertaining what it was the party intended to claim. You will see he did not mean to claim the mechanical parts in the remotest degree, nothing beyond the surface of the table. His invention was merely making a table expand in that particular fashion which, according to all the experience of persons who have seen the tables, is perfectly novel; such a mode had never been seen as that which Mr. Jupe gave out to the world by this patent. In his specification he describes not only the mode by which he did it, but the mode he obtained from his foreman, but he makes no claim for that whatever. Is it to be said if a man has discovered a principle, and goes to a mechanic, and says, "This is my view of an in-

---

* Vol. i. p. 117.

Pratt

vention, just give me a little mechanical assistance in bringing that into effect," and the man says, "I think you might do it thus and thus;" is it to be said, that by employing that person you invalidate your patent? Suppose a man not skilled in mechanics, were to perceive some obvious inconvenience in any of the common articles of life, a carriage, a vessel, a ship used for particular purposes, and he were to go to a mechanical man, and say, "I have for some time had an idea of something that would be an improvement, if such a matter could be achieved, but I do not understand mechanics, but the invention is mine." Will any man tell me, that a man so applied to, and assisting the party in one mode of the hundreds that might be devised, could it be considered as preventing the inventor from taking out a patent with his perfect concurrence? The invention here is not the mode, but the thing itself.

Lord Abinger.—What is the thing itself?

Sir F. Pollock.—The table that expands from a centre, that enlarges by diverging from a centre. Is it to be said, that if a man has an invention, that he cannot consult his own workmen, and bring it to perfection?

Mr. Baron Alderson.—No doubt; if he invented one mode he may get a person to invent another. without prejudice to himself as the original inventor-

Sir F. Pollock.—Then he has invented and brought it into this form at the time; but he says, I think—

Mr. Hill.—He brought a card cut into four pieces.

Mr. Baron Alderson.—No doubt the mode in which it was effectually carried into effect, was an invention; no doubt about that; but it has been held to be a good patent for all that, because the original invention was a French one, such as the endless paper: all the material that made it so useful was his invention; but the original invention was the revolving web.*

Sir F. Pollock.—Now, my Lords, can any one after reading the specification, say that Jupe claims the mode; that he claims any particular fashion of the table, or particular machinery for doing it?—No, he distinctly disclaims every thing but separating the table into the parts, in the manner described. My friend said, when he moved for the new trial, that that would place the plaintiff in a dilemma. My Lord, this is the dilemma in which *Mr. Hill* proposed to put the plaintiff. He said he thought the facts put the plaintiff in this dilemma. Either another meaning must

---

* *Bloxam and others* v. *Else*, vol. i. p. 434.

Supe v.

be given to the word "divergence" than that he gave at the trial, or there is no novelty in the invention, according to his claim. He claims Gillow's invention, because what he says is his invention, is the dividing the table into sections of any number. Can he do so? Your Lordships will look to the specification. Then my friend says, he has claimed Gillow's invention, because that invention makes the table part from the centre. My friend did not like the word divergence at that time, so he called it a parting from the centre.

Mr. Baron Alderson.—He could not construct Gillow's table in any way, so as to have a central fulcrum, which is the object of keeping the table steady.

Mr. Baron Bolland.—All the parts should be equidistant.

Sir F. Pollock.—My Lords, in concluding upon this part of the subject, I am very anxious just to press attention to the state of the third plea. The third plea states the whole of the specification, and then it says merely this, that the plaintiff did not describe and show the nature of his said invention. My Lords, it is now plain that the objection on this point is reduced merely to this, whether the plaintiff can have a patent for an invention, merely consisting of that mode of dividing the surface embodying one mode his own, another suggested to him, and not his own, but which may be done in a variety of ways.

Mr. Baron Alderson.—The specification sets out a quantity of machinery, and no doubt, unless you come to evidence, that must be taken to be the invention of the party.

but disclaims it as forming the subject-matter of the patent.

Sir F. Pollock.—I cannot anticipate that your Lordships will deduce that we have claimed the machinery, when we have disclaimed it altogether, and taken pains to say our invention is on the surface dividing the table, and that it may be done in a variety of mechanical ways, with which we do not trouble ourselves; we point out one we have made, and point out another which we make no claim about; I leave it, and now I go to the defendant's piracy.

Mr. Baron Alderson.—That comes in the first issue.

Sir F. Pollock.—That turns on the first issue, the table the defendant proposes to give to the world.

Mr. Baron Alderson.—In this table there is one piece to put in the middle.

Pratt

Sir F. Pollock.—The central piece, my Lords, was so far in part anticipated by the plaintiff that he mentions in his specification that a portion might be left in the middle, and if they thought fit, of course a portion might be put in the middle.

Mr. Hill.—Do you claim that?

Sir F. Pollock.—We do not. What we claim I do not think it necessary to read again; we do not claim that. I say, my Lords, this mode of making an expanding circular table is a piracy of the plaintiff's invention; these pieces are identical in principle, though not coming to a common centre, but instead of that you are obliged to make some difference that there may be some colour that you have not made it the same. But, my Lords, I would ask, what is the mode in which it is done? Instead of expanding in a right line, as one of the witnesses expresses it, instead of going through the radius, you go through the sine and the cosine.

Mr. Baron Alderson.—It will form two motions.

Sir F. Pollock.—Exactly so; and, my Lords, I will ask what is the spirit of the invention of Mr. Jupe? Why it is this, that in order to make a circular expanding table, you shall make the portions of it, you shall separate them, and you shall fill up the interstices with pieces. My Lords, this was a question for the jury.

Mr. Baron Alderson.—Yes, no doubt.

Sir F. Pollock.—But, my Lords, it is one of those questions so eminently within the jury's province, that your Lordships would say to the defendant's counsel, why you cannot come to the Court and ask for a new trial when you did not choose to bring witnesses.

Lord Abinger.—I cannot say I feel that; because my impression was, that your witnesses tended to show it was nothing more than Gillow's principle, and I should have found that verdict; and I cannot blame the counsel for entertaining an opinion I had myself formed.

Sir F. Pollock.—I say, my Lords, when Gillow's patent expired, any body had a right to adopt it; but the jury found that defendant's mode was for widening as well as lengthening—for the purpose of giving the double motion, that, so far as that is done, it is a violation of the plaintiff's right. And, my Lords, although it is easy for my friend to say, Gillow gave to the world the right to make

Jupe v

a table in a particular fashion, and to lengthen it; my friend says, the same saw that cut it into two pieces, the same saw would cut it into four pieces, as if that was the mode, because the same hammer and other tools formed one watch, they would make another; and the same tools that would make one time-piece would make another time-piece. You are to take that—

Lord Abinger.—I think, perhaps, he would have used the word, "widen," but no matter in what direction.

Sir F. Pollock.—But is there any thing in Gillow's patent, or in any table that ever existed, of a combined lengthening and widening, so as to make it expand from a centre? There is not such a thing in the history of tables; and it is a question for the jury who have found for the plaintiff. I think it could be fairly put thus, "Do you think that this mode of lengthening and widening a table was adopted in order to obtain by the two motions, the combined effect of that which the plaintiff gives you in one groove?" That fact was a question for the jury, and if the jury had said, we do think it, whether a man had a right to use it, for one purpose or for another purpose, in the mode in which this table has been constructed, it has been adopted for the purpose of invasion.

Mr. Baron Alderson.—Which they thought colourable.

Sir F. Pollock.—Exactly so: that is what the jury thought and found; that this was a colourable mode of doing something which the plaintiff gave, and had given certain modes of doing. The defendant adopted this, and therefore it is brought into Court. I submit that in the first place the specification is good. The spirit of the patent is for the separating and widening the surface of the table; that is unanswered; and the mode of doing it the plaintiff claims nothing in right of. He added one of the modes as his invention, the other is not; but the other is doing that simultaneously, the mechanism of which he has nothing at all to do with—it is the invention of his servant; it is no improvement under his patent. He says, if that be so, the defendant is not entitled to a verdict on the third issue. The specification clearly describes what he intended to take out a patent for, and all the witnesses say the object was dividing, diverging, and filling up.

Pratt.

Mr. Baron Alderson.—It does not operate on oval tables.

Sir F. Pollock.—Yes, my Lord; for instance, here your Lordships will allow me to point attention to that figure; and that is what Mr. Jupe means as part of his specification, that sometimes they did not accurately diverge in a radial line; some oval tables, some oblong, with the principle of diverging away from a centre.

Lord Abinger.—Do you apply the rule also to a sofa table?

Sir F. Pollock.—Yes, certainly.

Mr. Baron Alderson.—A square may be operated on in the same way.

Sir F. Pollock.—It is, my Lord, and that is a specimen of an oblong table. The principle is equally applicable.

Mr. Baron Alderson.—You adapt it to figures that have no centre at all. I should have thought it must be circular.

Sir F. Pollock.—Mechanics speak of the centre of a square or of an oblong; your Lordship knows that.

Mr. Baron Alderson.—Where the major and the minor axes are cut across.

Sir F. Pollock.—An ellipsis has a centre.

Mr. Baron Alderson.—No doubt.

Sir F. Pollock.—Yes, the point where the axis major cuts the axis minor; so an oblong might have a centre.

Lord Abinger.—But then your pieces would not diverge from that centre.

Sir F. Pollock.—Oh yes, my Lord, they do; they diverge from that which in common *parlance* would be called a centre; therefore I say, in reading the specification, and seeing the spirit of the invention, your Lordships would say, if on the face of it the thing cannot be, that a person cannot have a patent for that sort of invention, then they would have the benefit of it upon the record; but upon the other part, namely, the piracy, the utmost my friend could have, would be a new trial upon the payment of costs; and I submit, that if a party obviously endeavoured to infringe, and is called upon to establish his case, he has no right to take the chances of the day, and then ask for a new trial. For these reasons, I trust that your Lordships will discharge the rule.

Mr. Richards.—My Lords, *Sir F. Pollock* having gone

Jupe a

so far into this case, I shall have to address your Lordships very shortly. There are many matters now agreed upon between the parties, that there is now no doubt of what the finding of the jury was. They have found that the invention is novel, and that the defendant was guilty of the infringement. The questions were reduced to two, first, whether their finding that the patent had been infringed, can be sustained; and secondly, respecting the validity of the specification. Now, my Lords, your Lordships will recollect from the evidence (there was no evidence called for the defendant), that there was no instance, prior to Mr. Jupe's, of a table being divided in the way Mr. Jupe's table is divided, namely, by dividing the circle, or square, into different parts, and separating also from a common centre; that must be admitted to be the subject of the patent within the second point. All the witnesses say, that the table made by Mr. Pratt, the defendant, is made in imitation of the invention of Mr. Jupe; and if your Lordships would look at it, you cannot fail to see, that Mr. Pratt's table is made by two motions —a more clumsy way than Mr. Jupe's table; because, supposing Mr. Jupe's patent can be sustained, that same effect is obtained as ought to be obtained from Mr. Jupe's table. Now, my Lords, I need not mention, that whether the patent is infringed or not, is a question for the jury; because it is impossible for the Court to take upon themselves to say, what contrivances may have been resorted to, to evade making the same article. When speaking of Gillow's patent, I must say it is not before the Court; but whether that was a patent merely for lengthening a table or not, I do not know. I should apprehend that all you can say of that is, that at the time Mr. Jupe made his invention, the table of Gillow's was a table any one was entitled to make; and I will assume, that at the time Mr. Jupe's invention was introduced, any person might make a table to draw out as a telescope. So far as that case applies, it would bring us to the question, whether the drawing out from the common centre be subject matter of a patent, and whether it is properly described in the specification. I am sure your Lordships will not say, because the invention is simple, therefore it is not the subject of a patent. I submit that supposing a thing to be, as the jury have found it to be, both novel and useful, then this would be a test, by which your Lordships would

Pratt

ascertain what is subject matter of a patent. Now as to the novelty; the Jury found that it was novel; every witness that appeared, said he had never heard of it before, and he had never seen it before; and it was plain and obvious, that it had never before been discovered; and as one of the working witnesses stated, such a thing had been most required by the trade. The more important question is as to the specification. Now, my Lords, that will depend almost entirely on the meaning of the word "diverge;" and to be sure, when I hear my Learned Friend say that common tables are drawn out from a centre, it puzzles me: you might as well say that two persons in the street, when they shake hands, part from a common centre divergingly.

Mr. Baron Alderson.—Four persons might.

Mr. Richards.—We are to see what he means by diverging from a common centre. I should say we are not to say what is meant geometrically. Your Lordships will see that the patentee claims for an expanding table; no doubt it must be so divided as to come within the meaning of an improved expanding table. Your Lordships heard a good deal said about the meter case. My Lords, I have a distinct recollection of that case, and nothing is more simple.

Mr. Baron Alderson.—*Crossley* v. *Beverley*.*

Mr. Hill.—That case, as reported, turns on different points.

Mr. Richards.—Very true, in that patent the principle had been known before, except the precise combination of the principle.

Lord Abinger.—Of two effects.

Mr. Richards.—But the effects were known before.

Lord Abinger.—Every principle of mechanics was known before.

Mr. Richards.—It is material here upon the words of the specification to say, that Mr. Jupe, when forming his specification, has laid no claims to the mode. He says, "I declare that my invention of an improved expanding table, consists in constructing the same, so that the sections, *a*, *a*, of which the original, or unexpanded table, is composed, may diverge from a common centre, and the table be enlarged or expanded, by inserting leaves or pieces in the openings or spaces, caused by the diver-

---

* Vol. I. page 480.

Jupe v.

gence, as hereinbefore described." Now, then, the question here is, whether he has, or has not, invented a table, so that the sections may diverge from a common centre: the mode is before your Lordships. My Lords, I do not feel that I can add anything more. The fact of the infringement is found by the Jury. I cannot suppose that your Lordships can infer that this is not an infringement, as to the construction of the specification. All that Mr. Jupe claims is, that which has been described so precisely; he lays no claim to the mode of doing it.

Mr. Hill.—My Lords, it is first important to see what it is the plaintiff has invented, and I have been wishing to see what claim, what power of mind it is that my friends claim for their client.

Lord Abinger.—*Sir F. Pollock's* argument, supposing he is right, is, that the modes are not part of the claim, and not required by the specification. *Mr. Hill* makes the third plea material; he says the specification extends to the machinery, therefore the invention is the machinery; but the evidence says, that is not the invention. Then if the invention is not the machinery, but cutting into four parts, then *Mr. Hill* says the third plea is not proved.

Mr. Hill.—Your Lordships see there can now, at all events, be no dispute at all upon what the plaintiff's invention is: it has been laid down so clearly by my Learned Friend, *Sir F. Pollock.* He says he claims nothing under the surface of the table; that, he says, is not his invention. My first object is, to show you that he does claim something under the surface of the table. Your Lordship will see, he discloses two distinct modes; one by hand, and the other by simultaneous divergence; he gives twenty-three figures in his drawings; and the whole of the figures, and the whole of these descriptions, are of a table when expanded, to use the words of his specification, by diverging in radial grooves, or are controlled to move in radial directions. It is possible therefore, my Lords, to contend, that he does not here claim something under the surface of the table; and it is possible to contend, that he does not claim that something shall be under this form, as either radial grooves, or some means of controlling the surface to move in radial directions? Then he has claimed something more than my friend says is his invention; and it will be most material to see he has claimed something more than we use in our invention

Pratt.

because we never move in a radial direction; if my friend is right in regard to his doctrine of divergence, although I remain of my own opinion, it is very unimportant in this case whether I am right or wrong. My friend has employed a good deal of ridicule on my humble proposition, which is simply this;—If I were to draw a radius here and another there, then he says Gillow's table is a divergence in a radial direction.

Mr. Baron Alderson.—You cannot have a common centre without three.

Mr. Hill.—Would your Lordship say so as a mathematician? I may not be able to point it out without the radii, but I know of its existence. Does not your Lordship think I know of its existence?

Mr. Baron Alderson.—A table like Gillow's is a divergence from every central point.

Mr. Hill.—This is the central line. Allow me to put it in this way. You have the central line here; the diameter, which is a central line. May I not bisect it? Now shall I not find a centre?

Mr. Baron Alderson.—You will.

Mr. Hill.—And does not this move radially from that centre?

Mr. Baron Alderson.—It may from the centre of the diameter; nobody could understand that to be diverging.

Mr. Hill.—I have explained what I mean.

Mr. Baron Alderson.—By the divergence of Mr. Pratt's table you could find the common centre by dividing the sections, but how do you find the common diameter?

Mr. Hill.—Your Lordships see there is a centre.

Lord Abinger.—Suppose you draw from the diameter lines parallel to it when the diameter is moving—moving in the same circle—each part of the same circle is moving in that line; if therefore your motion is from the diameter, supposing you draw them out, will not some of the parts of the segments meet with these lines?

Mr. Baron Alderson.—If you have only two lines of motion you cannot discover the centre; if you have three you can.

Mr. Hill.—I do not discover the centre by these means, but it does not appear to be material. If this be a divergence in a radial direction then the plaintiff has claimed for his own something that is old. Supposing this should

Jupe

not be a radial direction, we have not infringed his patent, because we never do diverge in a radial direction.

tion as to mechanical
alents for the

Mr. Baron Alderson.—The question is whether you have not adopted what is equivalent, but that is for the jury.

Mr. Hill.—I submit that it is not, in this general sense, for the jury. I was going on to say what I proposed to myself to do by reading this specification, to show that something was claimed under the surface here, and I was saying that all the twenty-three figures have the physical means attached to them of expanding by diverging in radial grooves, or being controlled to move in radial directions,—throughout the whole twenty-three figures. If my friend's client had been claiming only the surface, and if his specification was only to show how a table, divided into four parts in the surface, might be made to expand, what was the use of twenty-three figures? and how singular it is that these twenty-three figures should all carry a given law, and that law should be announced in the specification thus, and that there should be a reference to it afterwards from the end retrospectively. My Friend says we must look to this, according to the common sense of mankind—I agree with that; I am sure the common sense of mankind would say there were not twenty-three figures given for the purpose of exemplifying a principle. If you look to what *Chief Justice Eyre* said in the case of *Boulton* v. *Bull*,* who tells you that the commonest explanation by which a principle was announced would have been sufficient.

bodies principle must
eans by which it is
into effect.

Mr. Baron Alderson.—That could not have been done without some actual contrivance by which it was effected.

Mr. Hill.—That was the suggestion he meant to offer, that the party must shew a mechanical contrivance, and that mechanical contrivance must be his own. Suppose Mr. Watt, instead of making those multitudes of experiments which I know cost 60,000*l.*, suppose he had put his hand in his pocket and said, I think it would be clever instead of condensing steam in a cylinder, by introducing cold water, to let the condensing go on in another place. Yes, he would have been answered, it is very clever, but it is impracticable; but how are you to make it work outside? How is this to be accomplished? It would require little talent to raise ten

---

* Vol. I. page 117.

Pratt

thousand objections. That was for him to accomplish. It was the labour and glory of a life to bring it to perfection. My friend conceded that, when he said that there cannot be a patent for a barren principle. He is very happy in the choice of his terms, but it must be collected into substance, and reduced into a form, and therefore Mr. Jupe had done nothing when he cut his card into four parts, and brought it to his workman, and said, form that into a table which shall expand; and I use it for the purpose of showing that if they have infringed something, they must have claimed something; and I say he has not done that which he was compelled to do to make his claim.

Mr. Baron Alderson.—It all arose upon this question, whether the principle is not a new manufacture. The moment it was given out in the shape of a steam-engine, the Court held it was a new manufacture.

The main question whether the principle invention is a

Mr. Hill.—I apprehend it is a principle well established, that there must be a new manufacture; neither do I apprehend cutting a card into four pieces, and saying make it into a table, constitutes a new manufacture.

Mr. Baron Alderson.—Is not an expanding table a new manufacture, although the table part is old, if it makes another, an improved expanding table, that is a new manufacture.

Illustration of manufacture.

Mr. Hill.—That is not my proposition; I am saying there must be something under the surface, that invention cannot end in the surface of the table, otherwise it is no new manufacture. It cannot be a manufacture, to get a board, and divide it into a given number of parts; so it seems to me. I apprehend, my Lords, that the true statement of what the plaintiff has done is this—a table, the plane of which is divided into more than two sections, each of which diverges from a common centre, and is guided by means of a radial groove.

Mr. Baron Alderson.—Does it say radial groove?

Mr. Hill.—I apprehend it must.

Mr. Baron Alderson.—He claims the use of a radial groove as the means of bringing it from a common centre.

Mr. Hill.—He may not claim the pieces of metal which he calls a groove.

Mr. Baron Alderson.—That is old, making it by grooves.

Mr. Hill.—Oh! yes, but your Lordship sees it is not necessary for me to contend that he claims the groove.

Jupe v.

Mr. Baron Alderson.—I presume you had witnesses whom you could have called, if you had not thought it a safe case.

Mr. Hill.—I really thought, perhaps mistakenly, that the facts were in my favour, therefore I did not call any witnesses, but I had them; I should have had witnesses who would have said the principle is not the same; my friend had a great number of witnesses, who said the principle was the same. I should have twenty witnesses who would have said it was not so.

Lord Abinger.—I do not see how you can give that under the third plea. I do not see how you can get rid of that, the fourth plea is the same. The second plea is that the invention is not the invention of the plaintiff; the fourth, that the invention is not new; you show that somebody else was the inventor. I think you are entitled to a new trial, but upon payment of costs. You seemed to think at the time that the case was in your favour altogether, but I cannot say how that would be.

Mr. Hill.—Does not your Lordship think it material on the second plea?

Lord Abinger.—That is not their invention.

Mr. Hill.—Your Lordship sees that upon the old rules I should have been entitled to a nonsuit, because the witnesses had clearly proved the variance. Under the new rules, I am entitled to a verdict for the defendant, the case would stand as if your Lordship had directed the Jury to find for the defendant.

Lord Abinger.—The invention is not new; if you could show that Gillow's was a divergence from a common centre, it is the same as the plaintiff's patent, and then it is not new; the Court doubt that.

Mr. Baron Alderson.—I do not see how you can carry it further, it being a question for the jury.

Lord Abinger.—Supposing you satisfy the Court that Gillow's patent was as much a divergence from a common centre as this patent, it is not new.

Sir F. Pollock.—How can my friend do that when Gillow's patent is not before the Court?

Mr. Hill.—I will propose that I can begin by supposing Gillow's patent is such as reasonable persons would take out for it, and suppose that when that patent is running, my client had made his invention of drawing out the table in another direction, and suppose he had taken out a

Pratt.

patent for that improvement, would or would not Gillow, by making our table, have infringed our improvement.

Lord Abinger.—That is, upon the general issue, the piracy; all that remains to do now, is to show that the plaintiff's is not a new invention.

Mr. Hill.—That the plaintiff's is not a new invention.

Lord Abinger.—That Gillow's is the same.

Mr. Hill.—That Gillow's and the plaintiff's are the same,—it does appear to me that taking the plaintiff's invention to be what my friend says it is, having nothing to do with anything under the surface of the table, that it is now a mere cutting the table and expanding it, and also taking this to be clear, as I say it is, that Gillow might have expanded his table by the same means in the other direction, that is, Gillow might have done what we are doing, and if he had done so, it could not have been said he had infringed Jupe's invention, that is, first considering I have proved our invention is no more than Gillow's; then I say the plaintiff's is no more than Gillow's, because the plaintiff does not attempt to deal with anything under the surface of the table.

Lord Abinger.—Therefore you say the plaintiff's invention is not new, how can we help you, all the point reserved was, whether the specification correctly makes the invention consist in the machinery? if it does then that point I reserved, because on that you say I ought to have directed the verdict the other way.

Mr. Hill.—Do your Lordships now think the specification does claim the machinery?

Lord Abinger.—It will be incumbent on you to show that the claim of the plaintiff is upon the machinery.

Mr. Hill.—I have shown that the specification claims the machinery.

Mr. Baron Alderson.—You had better consider before the new trial, whether you have got a plea to raise the question, whether this goes to the principle: I doubt whether you have any such plea. The first plea merely raises the question of infringement; the second is for a new invention—it may be a new invention—you had better look into it. A great number of pleas which I see drawn, will require great consideration; a great many say the invention is not useful; they ought to say it is prejudicial, as in *Arkwright's* case.*

* Vol. I. page 53.

Jupe

Mr. Hill.—Does your Lordship think that where the evidence, which it is admitted, says that the claim is for something upon the surface of the table, as it appears by the specification?

Mr. Baron Alderson.—That was rather a metaphorical expression of *Sir F. Pollock*: he meant simply this, that the claim of the plaintiff was for a table diverging from a common centre.

Mr. Hill.—My friend only does what his witnesses over and over again say; almost every witness lays it down in these terms.

Mr. Baron Alderson.—He does not claim the machinery, but the expanding table.- although machin' is necessarily employed therein

Mr. Hill.—My friend has only adopted the language of his witnesses; I open with the evidence of Cottam—"so that in fact you think the principle consists in the mode of dissecting the surfaces of the table." Yes.

Mr. Baron Alderson.—He ought to have said in making it move from a common centre; he means that.

Mr. Hill.—Cottam again to a question put by your Lordship, says—"I consider the plaintiff's to consist of forming a round table by sections from a centre."

Mr. Baron Alderson.—That is the way they always give their evidence, when the question is, whether the parties have infringed upon a patent—because you always look to the principle to see where they differ in the mechanism.

Mr. Hill.—Hawkins says, "the patent appears to me to confine itself to the surface, and not to the direction of the machinery; I have read it with attention." My friend does not vary from his witness.

Mr. Baron Alderson.—So far as the diverging and separation, *Sir F. Pollock* is right.

Mr. Hill.—Your Lordships will distinguish between—

Mr. Baron Alderson.—Look at the last part of the specification: "I declare that my invention of an improved expanding table, consists in constructing the same, so that the sections, *a, a,* of which the original or unexpanded table is composed, may diverge from a common centre." Now that is the invention.

Sir F. Pollock.—He does not confine himself—

Mr. Baron Alderson.—Whether that be, or be not, a good patent as so specified, whether the patent is for a principle or not, is a question I don't think you will raise by the plea.

Pratt.

Mr. Hill.—Your Lordships would read that in connexion with what goes before, "Nor do I confine myself to the precise manner of moving the sections *a*, *a*, of the surface of the table."

Lord Abinger.—Perhaps the way to look at it is this: He says, "I have found out that you may divide a table into four sections or more, and make them expand from a common centre, and so make a large table; therefore, that is my invention. I find it may be done by several mechanical means; I thought it might be useful when done, and I have discovered that it may be done; therefore no matter by what means you do it, provided you adopt the principle of making the divergence from a common centre."

Claim to a principle involved in a particular construction wherein machinery is used but not claimed—

Mr. Hill.—That is not his specification.

Lord Abinger.—Yes it is—My brother *Alderson* says, very justly, that to raise that question, if that be the construction, you ought to set forth the specification; I admit it does not arise upon these pleadings.

Mr. Hill.—I could not do that, because it appears to me the specification does claim a physical mode.

Mr. Baron Alderson.—Then that is raised by the issue, whether it is new.

Lord Abinger.—You say I ought to have directed the jury to have found that.

Mr. Hill.—I wish to be exactly in the same state, if your Lordships think that should have been the direction.

Mr. Baron Alderson.—I should entertain great doubt whether anything more is claimed than an expanded table by divergence from a centre.

Lord Abinger.—It should be on the usual terms, and with liberty to make such amendment as you please.

Mr. Baron Alderson.—Or you can raise it by special verdict.

Lord Abinger.—Or by bill of exceptions; but still I think you had better consider your pleadings. The new rules make it necessary to consider very accurately what pleas you should make; now you are confined by the pleadings.

Mr. Baron Alderson.—And you will find a great number of dicta given by Judges. It is probable that something may arise out of that provision that states that an invention, if prejudicial, is not to be the subject of a patent. I

Jupe v. Pratt.

Cornish et al. v.

agree that if a patent is not useful it may not be prejudicial, therefore you ought not to plead that it is not useful.

Lord Abinger.—I think you ought to ask the Judge at chambers to let you state both.

Sir F. Pollock.—Upon payment of costs.

Mr. Baron Alderson.—Yes.

Sir F. Pollock.—I may be allowed to amend.

Mr. Baron Alderson.—Yes; one advantage of the new pleading is that we shall learn.

Sir F. Pollock.—They ought not only to pay the costs of the day, but the costs of the cause.

Mr. Baron Alderson.—Yes.*

CORNISH & SIEVIER *v.* KEENE & ANOTHER.

In the Court of Common Pleas, before Lord Chief Justice Tindal and a Special Jury.—January 30, 1837.

THIS case commenced in the Court of Chancery (Rolls Court) by the plaintiffs making an application for an injunction. A great number of affidavits were filed on both sides of a very contradictory character. The defendants were ordered to keep an account, and the plaintiffs were to bring their action.

The declaration set forth that letters patent had been granted to one of the plaintiffs, Robert William Sievier, on the 17th day of January, 1833,† for "An improvement or improvements in the making or manufacturing of elastic

---

* The defendant did not amend the pleas, and the verdict was not disturbed.

† The specification was in the following words:—

"To all to whom these presents shall come, &c.—My invention of 'an improvement or improvements in the making or manufacturing of elastic goods or fabrics, applicable to various useful purposes,' are designed for the production of an elastic webb cloth, or other manufactured fabric for bandages, and for such articles of dress as the same may be applicable to.

"The first object which I propose, is to manufacture an article by the ordinary knitting frame, or similar kind of machinery, in which cords or strands of Indian rubber shall be introduced between the loops or stitches of the fabric, for the purpose of forming elastic cords or bands round the margins or other parts of stockings, socks, gloves, night-caps, drawers, and various other articles of clothing. The second object is to manufacture in the ordinary loom an elastic woollen cloth, by the introduction of cords or strands of Indian rubber among the longitudinal threads or yarns which constitute the chain or warp, and

Keene et al.

goods or fabrics applicable to various useful purposes." That Sievier had assigned one moiety to Cornish. That also among the transverse threads or yarns which constitute the weft or shoot, and which cloth shall be capable of being afterwards felted and dressed with a nap. The third object is to produce a cloth from cotton, flax, or other suitable material not capable of felting, in which shall be interwoven elastic cords or strands of Indian rubber, coated or wound round with a filamentous material.

"The first of these improvements I effect by preparing knitting frames, or other similar machines, in the usual way for the production of the knitted materials called stocking fabric; and when the same are set to work, and the fabric has been manufactured by the ordinary knitting process up to the part at which I desire to introduce the elastic cord or strand, I then, by the adjusting screws of the machine, provide for the elongation or contraction of the lengths of the loops or stitches of the row next to be produced across the machine, in order to form a channel to receive the said elastic cord or strand; and having prepared fine strips of Indian rubber, which may, if desired, be coated or covered with a filamentous material, as described in the specification of my patent, dated the first day of December, 1831, and inrolled in the Office of the Rolls Chapel of the High Court of Chancery, in June, 1832, I conduct such thread, cord, strand, or strip of Indian rubber by means of a long needle, hook, pincers, or other suitable apparatus answering the purpose of a shuttle across the machine between the row of stitches or loops which were last made, and those which are then about to be formed; and having drawn the said Indian rubber, thread, cord, or strand, straight and smooth, I complete the last mentioned row of loops or stitches by the ordinary movements of the machine which encloses the India rubber, thread, cord, or strand, and keeps it securely in its place interwoven with the threads of the fabric. A second thread of Indian rubber is in like manner introduced between the next or other subsequent row of stitches, and is in the same way confined; and any further number of these threads, cords, or strands, may by the same means be inserted and interwoven into the fabric at such parts as may be required for the purpose of producing (when the selvages are connected or whipped together) elastic bandages, garters, or bracings round the stocking, sock, glove, night-cap, or other article of wearing apparel.

"In effecting the second improvement, the production of an elastic woollen cloth, I introduce into the loom among the longitudinal or warp threads or yarns of the intended fabric, longitudinal threads, cords, or strands of Indian rubber, or I constitute the warp entirely of such strands, either covered with a filamentous material or not, as before described; and through or between the threads, cords, or strands of warp, I pass the transverse weft or shoot threads or yarns in the ordinary way of weaving, for the purpose of effecting that intervention which produces the cloth; these transverse or weft threads being composed in part of the Indian rubber strands, or of the ordinary threads or yarns of the fabric, according as I may wish to produce a cloth which shall be elastic lengthwise only, or in both directions.

"If the elastic cloth so produced should be intended for outward garments with a nap upon its surface, I should employ, in connexion with the Indian rubber strands, yarns spun from short wool, which,

Cornish et al. v.

the plaintiffs had had the full and exclusive enjoyment of the said invention, and then set forth that the defendants had infringed the said letters patent by making and selling various articles. The defendants pleaded *Firstly*, That they were not guilty of the infringement; *Secondly*, That Sievier was not the true and first inventor; *Thirdly*, That the invention was not new; *Fourthly*, That the alleged invention was not an improvement; and, *Lastly*, That the said Sievier had not fully described the said invention. On all these pleas issue was joined. With the pleas the defendants filed objections to the patent, which corresponded with the pleas.

Mr. Attorney-General (*Campbell*), *Mr. Sergeant Wilde*, *Mr. Sergeant Stephens*, and *Mr. Hindmarch* appeared for the plaintiffs, and *Sir F. Pollock*, *Mr. Cresswell*, and *Mr. Knowles* for the defendants.

Mr. Hindmarch opened the pleadings.

Mr. Sergeant Wilde, in the absence of the *Attorney-General*, addressed the Jury and said,—You have learned, from the opening of the pleadings, that the cause involves the question of the validity of a patent in the name of Mr. Sievier, who has assigned a moiety to Mr. Cornish.

after having been woven, I should finish as the woollen cloths are usually finished, that is, felt the wool in the fulling stock, raise the pile by gig machinery, or by hand cards or teazles, and afterwards shear the nap down to a fine smooth surface. In manufacturing an elastic cloth from cotton, flax, or other material which is not intended to be milled or fulled, I introduce into the fabric threads or strands of Indian rubber, which have been previously covered by winding filaments tightly round them through the agency of an ordinary covering machine, or otherwise; these strands of Indian rubber being applied as warp or weft, or as both, according to the direction of the elasticity required. By thus combining the strands of Indian rubber with yarns of cotton, flax, or other non-elastic material, I am enabled to produce a cloth which shall afford any required degree of elastic pressure, according to the proportions of the elastic and non-elastic material.

"It remains only to add, that the strands of Indian rubber are, in the first instance, stretched to their utmost tension, and rendered non-elastic, as described in my former patent; and being in that state introduced in the fabric, they acquire their elasticity by the application of heat after the fabric is made.

"Lastly, as my invention consists solely in the employment of strands of Indian rubber in connexion with yarns, in the way described for manufacturing elastic goods or fabrics, I have not deemed it necessary to describe any particular kind of machinery for carrying the same into effect, as such machinery is well-known, and forms no part of my invention. In witness whereof, &c.

ROBERT WILLIAM SIEVIER."

Keene et al.

The defendants deny that they have infringed the patent. They say that Mr. Sievier was not the true inventor; and lastly, they say that it is no improvement. Persons seldom contend for that which is of no value; it may therefore be fairly inferred (whether the plaintiff is the inventor or not) that the subject-matter in dispute is of some value. I will, as shortly as I can, state to you, what was the state of manufacture in the article before the present patent was taken. Originally when first India-rubber was used in this country, the mode was to introduce the warp or longitudinal thread in the fabric, to be woven of India-rubber (caoutchouc) drawn out into long strands. It is a peculiarity belonging to this article that though very elastic, if drawn out to its extreme length, and kept in that state of tension for a certain time, it loses its elasticity. Those strands were kept stretched to their full length till that effect was produced, then it was introduced into the warp, and the woof, or transverse thread, was introduced across those longitudinal threads of India-rubber. After the article was woven it was necessary to restore the elasticity, which had been lost through the circumstances I have mentioned. The passing of a hot iron over the surface has the effect of restoring the elasticity to the India-rubber (by which name I will call the article, as being most familiar), and then I believe that the elasticity exists to the extent of giving a contracting power of one-fifth of the whole length. In the article I have mentioned you will observe the India-rubber was in no way covered, except so far as the transverse threads of cotton or linen made it so. They in truth scarcely formed a part of the fabric; and if any of them broke, the effect you may readily suppose was very much to destroy the usefulness and power of the fabric. Afterwards, before the India-rubber strand was introduced into the warp, it was what was called braided; that is to say, it was covered round in two opposite directions with a fine filament of some thread or other, and the India-rubber strand being then wound round or braided (an operation very familiar to persons engaged in the trade), that was not found to answer; the braiding partly remedied some of the defects but not entirely, that plan was discontinued, and then another was adopted, which produced the articles I now hold, and that mode was this:—the longitudinal strands of India-

Cornish et al v.

rubber were placed in the loom, but then above and below them were placed strands of cotton or other threads, so that the fabric when made consisted of three distinct layers (if I may so say) of threads, the top and bottom of cotton or other material of that description, the layer in the middle of India-rubber. That produced a thick and heavy article; and besides that, the India-rubber was counteracted by the surface above and below; and though the India-rubber regained part of its elasticity by the application of a hot iron, its power was restrained by the materials with which it was connected; the elasticity was therefore partial. Thus the articles were so heavy and so little elastic as to be found very little suited for surgical purposes. Mr. Sievier, the patentee, in this state of things, addressed his attention to the subject, and the article which he has produced is the one I now hold, and the superiority consists in several particulars. The India-rubber exercises the power of its elasticity to the full extent which it possesses. The India-rubber controls the degree of expansion and contraction of which the article will admit. In the next place it is extremely light: it is porous; and besides that, from the material which is used, it can be manufactured at a considerably less cost than the old article; and I am satisfied you will find, in the course of the evidence, that no sooner had Mr. Sievier introduced his invention into the market than it excluded all the old articles. Now, gentlemen, having stated to you the properties of the articles made under the patent, I will just describe how those properties are produced. In the old manufacture the entire of the layers or plane was of strands of covered India-rubber close together. Mr. Sievier introduced the covered India-rubber only at intervals, there are therefore strands of India-rubber, with intervals filled up with threads of cotton or other material. These covered India-rubber strands being placed in the loom in their state of greatest extension, the strands of cotton or thread are also placed in the warp, in the same plane, so that the entire surface consists first of several strands of cotton or thread, then strands of covered India-rubber, and so on to the width of the intended fabric, when that is made, a hot iron is applied to restore elasticity, the effect of which is, that the intervening space being so light and so thin, the India-rubber is the commanding ingredient. It is that which gives the

Keene et al.

degree of expansion or contraction; and when the India-rubber contracts and draws the other ingredients along with it, it presents the puckered appearance which you here observe. I have explained to you the different articles which appear to have been constructed before this patent. We shall show the introduction of this new invention to the trade, and you will find the immediate effect of the introduction of this article. It will be proved to you by medical gentlemen who have used it, that the effect was beyond anything before known, and will show, to the extent of their knowledge, that it was entirely novel, and that it was a most decided improvement, by which the sufferings of mankind are allayed. I understand that it is intended, on the part of the defence, to attempt to show that somebody or other has talked about or affected to make some such article. We are perfectly prepared to meet and repel such evidence. There is one objection on the record, which is this, that the specification does not correctly describe the article. Gentlemen, Mr. Sievier in his specification describes this as applicable to three different objects. First, to the introduction of this article or fabric into another fabric, where that other fabric is required only to be partially elastic, such as gloves. The second object is to introduce this article into woollen cloth. The third object is the article I have described to you for bandages, braces, and things of that sort. Those are the three things described in the specification. Gentlemen, the best proof whether this is described, or not, in the specification, will be that we shall call persons before you, who, without any other aid than the specification, have manufactured the article, and, of course, the question is not whether any person wholly unacquainted with weaving, or the trade to which this belongs, should understand it, but whether a person of a reasonable competent knowledge of the subject does understand it, because if a patent depended on all the world understanding it, perhaps there would be no good patent at all, therefore we are to suppose a person to bring a general knowledge of the subject: in other words, you are asked, Is it a fair and reasonable statement which a person of ordinary capacity and knowledge would be able to carry into effect? I believe no doubt will remain on that, I will not therefore take up more of your time, but proceed to call witnesses.

Cornish et al. v.

The patent was put in, and also an official copy of the specifications, which were read.

John Rogers sworn. Examined by *Mr. Sergeant Stephens.*—I am a wholesale brace manufacturer, have been so for some time, from the time this description of manufacture was first introduced into this country which was about 1829. In addition to braces, surgical bandages are made of the web, and garters and things of that description. I am acquainted with the article made under Sievier's patent, the article, No. 3, is according to the patent; there are various specimens of the article, No. 3, they are all according to the patent. I never purchased any such before January, 1833. I have purchased them largely since from the plaintiffs, Cornish and Sievier, from the date of the patent to this time. I am acquainted with the specimens, No. 1 and No. 2; never knew the articles, No. 3, before the patent, those before made differed materially from the patent articles. In No. 3, the warp is composed of India-rubber threads covered or braided, and cotton yarns or cords which form part of the same warp, the yarn is between each strand of India-rubber instead of being above or below. No 3, has advantages which Nos. 1 and 2 have not, it is more elastic for surgical bandages, it is lighter and is much cooler and cheaper. This is owing to there being a less number of India-rubber strands; the weft is of cotton yarn. I have bought more extensively of the patent article than the old one. I have purchased these articles from the defendants since the patent. The kind of article most in use before the patent was like Nos. 1 and 2, but the articles, No. 3, are now most required.

By the *Lord Chief Justice.*—Then No. 2 is not a patent article.

Witness.—No; nor is No. 1.

Sir F. Pollock.—Your Lordship will have more of that by and by.

Examination of the witness continued by *Mr. Sergeant Stephens.*—I have never bought No. 3, or anything like it before the patent. The article No. 4, is as nearly as it can be made like the plaintiff's. I purchased the article, No. 4, in the latter part of 1834. I bought it of Messrs. Keene and Co., the defendants. I should have known if such articles had been in the market before; I think I should have known if it had ever before been pro-

Keene et al.

duced. I am acquainted with the manufacturers, there are not more than seven or eight, and of them only three or four manufacture extensively.

Cross-examined by *Sir F. Pollock.*—I have been in trade twelve or fourteen years. First heard of these articles three or four years ago; we had brace web from Paris previously to that, I never saw them so far back as 1820. The turning india-rubber to account in this way, by a strip of it being covered over with a fabric of cotton was known as far back as 1829, though not made in England, and used for braces and various articles.

The Lord Chief Justice.—That is, the art of twisting the fabric of cotton round a filament of india-rubber was known.

Witness.—Yes; it was in use for braces and belts, I did not know of it for anything else.

By *Sir F. Pollock.*—In No. 2, the filaments or threads of india-rubber do not touch each other, and is obliged to be a much thicker article to do so. There is much difficulty in weaving it; particular kinds of machinery are necessary. The looms have to be fitted up in a different way to what other looms are. The old looms will do with some additions; there must be bobbins made to carry the india-rubber threads. The principle of construction of No. 4 is the same as No. 3, and the principle is, the india-rubber threads have a cord or thread run between them, alternately, or every other two, or every other thread, as you want the elasticity of the web, which is different to laying them above and below. India-rubber and cotton had been mixed before. The principle of the plantiffs' patent was the placing the threads alternately, and the web being more elastic.

Sir F. Pollock.—Don't confound the effect with the principle.

The Lord Chief Justice.—In effect it is the same question,—what is the difference between this and former discoveries?

Witness.—The only novelty I can see is that the threads are laid alternately, the web is much more elastic.

Several specimens of web were handed to the witness, marked A, K, W, and W A, which he stated were made on the same principle as that marked, No. 3, but not so well made.

Re-examined by *Mr. Sergeant Stephens.*—The braiding

Cornish et al. v.

of india-rubber was known before the patent; No. 1, is so done; and uncovered threads of india-rubber with cotton were known before the patent; No. 2 is so made. I never knew india-rubber, covered or uncovered, combined with cotton, as it is in No. 3, before the patent. In No. 2, there is no yarn placed in the same plane with the india-rubber. I never saw the specimens, nor similar ones, to A, W, K, in the market before the patent.

Benjamin W. Hickling sworn. Examined by *Mr. Hindmarch.*—I am a wholesale brace-maker, and have been in that business four or five years. I am in extensive business; I remember the first introduction of elastic webs. The specimen No. 1, has every strand composed of india-rubber. I remember Sievier's patent being taken out. I bought a quantity of No. 3, in August 1834, but had seen it before that time; never saw specimens of that kind before 1833. I purchased similar articles in October, 1834, from the defendants Keene and Co. I am well acquainted with the article, No. 3; it is cheaper, but I do not think it so good for braces as No. 1. I now sell most of No. 3.

Dr. Andrew Ure sworn. Examined by *Mr. Attorney-General.*—I have attended to the fabrics made of india-rubber before 1835. I have seen the specification of Sievier's patent, and the web made according to the patent, and the articles, No. 3, of elastic and non-elastic threads. I have seen the article No. 1, frequently. The peculiarity of No. 3, is, that it consists of filaments or strands of india-rubber, interstratified with threads of cotton or other textile matter in the same plane; and those strands of india-rubber may be placed at any distance asunder, and the intervals in the same plane filled up with common thread. I consider No. 3 a great improvement over No. 1. It may be made of any degree of elasticity—and cheaper. No. 3 is lighter and better adapted to various purposes, and particularly adapted to medical purposes, and is a very important improvement for that purpose. I have read the specification, and do not see the least obscurity in it. No. 4 is on the same principle of structure as No. 3; the parallel strands constitute the warp, partly elastic, and partly inelastic. I consider No. 4 the same in principle as No. 3.

Cross-examined by *Sir F. Pollock.*—No. 4 is certainly the same as No. 3. No. 1 is made by every cord being an

Keene et al.

india-rubber cord, covered with cotton. No. 4 differs from No. 1. So far as No. 4 is concerned, it is but mixing together two things, each of which have been used before for the same purpose; but it is a new combination. No. 3 might have been known before, but my attention was first called to it about four months ago.

Re-examined by *Mr. Attorney-General.*—Nos. 3 and 4 are of the same structure. No. 4 consists of braided strands of india-rubber, alternately interstratified with threads of common fibrous matter; and such is the case of No. 3; and Nos. 3 and 4 are essentially different from Nos. 1 and 2.

George Lindsey sworn. Examined by *Mr. Sergeant Wilde.*—I am a weaver, and in the employment of the plaintiffs, and have been ever since 1833. The articles No. 3, are manufactured by my employers; never saw such articles manufactured before I went to plaintiffs' employ. The principle of the manufacture is an elastic one, modified by combined threads. I had been in the defendants' service six months previous to entering that of the plaintiffs. I left the defendants' service in consequence of their saying they were being beaten fairly out of the market by those who entered it long after them, and that they were under the necessity of lowering their weavers' wages. The article they were manufacturing as to which they were being beaten out of the market was elastic webbing. I never saw web with elastic and non-elastic strands before 1833. I have read Mr. Sievier's specification. I have made the second article in the patent, which is a woollen manufacture, and also the article No. 3. I am quite certain any weaver understanding his business would be able to make the invention from the specification.

Cross-examined by *Sir F. Pollock.*—I should suppose that a web of all elastic strands had been known before. No. 3 is of two sorts, elastic and non-elastic. Messrs. Keene and Co. had when I was in their service, several looms, by which they made such articles. I do not remember any alterations in such looms when I was there. There were intermediate materials made by me for the defendants. I used two shuttles, one with elastic, the other with non-elastic materials: it is done for tying the india-rubber in —it cannot be done without. This piece resembles what I made for defendants; but there is a greater quantity of

Cornish et al. v.

non-elastic material in it, but it is of the same principle; that is, the intermediate material latitudinally.

Sir F. Pollock.—Your Lordship will find in the patent there is nothing about longitudinally or latitudinally.

The Lord Chief Justice.—As far as the case has gone, it is longitudinally.

Mr. Cresswell.—He says at the defendants' he only wove latitudinally, therefore it resembles that which he wove at the defendants'.

Cross-examination continued.—That which I wove at the defendants' would be elastic latitudinally instead of longitudinally; its elasticity would be on the same principle as No. 3. When in the service of the defendants I never saw a piece resembling that marked K. I never was asked by Mr. Benjamin Nickels to make such as is marked K.

Re-examined by *Mr. Attorney-General.*—I never saw any of the article, No. 3, made at defendants'.

William Morton sworn. Examined by *Mr. Sergeant Stephens.*—I am a frame-work knitter. I have seen the specification of plaintiffs' patent. I have worked, according to the description of the invention, to produce the first object of the invention, and succeeded in producing it. It was from the specification I made it.

John Pointer sworn. Examined by *Mr. Hindmarch.*—I am a silk-weaver; have been so for forty-four years; I have read the specification of the plaintiffs' patent; I made the two pieces of No. 3 from the description. The question was asked me, whether I understood the phraseology of the specification; I said I believed I did; I tried to make it according to the description, and perfectly succeeded.

Cross-examined by *Mr. Cresswell.*—You may call me a stupid workman, but, at all events, I always gave satisfaction to my employer. The raw material was brought to me by Mr. Sievier. I consider that as the cotton is not elastic, the closer the union between the two articles the less elasticity there is. I therefore made the first with one-third elastic, and the other two-thirds non-elastic.

Re-examined by *Mr. Attorney-General.*—I made the pieces exclusively from reading the specification.

Frederick Skey sworn. Examined by *Mr. Attorney-General.*—I am assistant-surgeon at St. Bartholomew's Hospital, and lecturer on anatomy. At the request of

Keene et al.

Mr. Sievier, I, four or five years ago, made an experiment with elastic webbing, but at that time advised Mr. Sievier that I thought it would not answer for surgical purposes. The description of webbing then tried was like No. 1; it was too dense, and required too much force to extend it. Several months after Mr. Sievier brought another specimen, which answered admirably for many surgical purposes, and has been applied at the hospital. Mr. Sievier's patent webbing is lighter and more porous, which renders it suitable to surgical purposes. Before Mr. Sievier brought his elastic web, I had never seen any made on the same principle.

Cross-examined by *Sir F. Pollock.*—I do not think No. 4 a good specimen of the invention. I consider No. 4 cannot enter into competition with No. 3, for surgical purposes. I do not say No. 4 is not fit for surgical purposes; it is not more suitable than No. 1.

Re-examined by *Mr. Attorney-General.*—I have seen several specimens of No. 3, all on the same principle, and there are some more applicable than others. No. 4 appears to have alternate elastic threads, all in the same plane. No. 4 and No. 3 appeared to be formed on the same principle, but are of different density and porosity.

Joseph Rose Holt sworn. Examined by *Mr. Attorney-General.*—I am a surgeon. Mr. Sievier's bandages are better for surgical purposes than any I ever saw before: they may be proportioned to the degree of pressure considered desirable. They are lighter, and more porous; they admit the perspiration to pass through. They are also cheaper: I have tried them on several patients, and they have answered well. The specimen would answer in some cases, but not so well as No. 3. The objection to No. 1, is, that you are not able to apply pressure according to your wish.

Cross-examined by *Sir F. Pollock.*—I first had my attention called to this matter within the last six months.

George Frederick Minton. Examined by *Mr. Sergeant Wilde.*—I am a wholesale hosier, and have been extensively engaged in the sale of braces and other articles made of elastic web, since 1833. I am acquainted with the article manufactured under this patent; have known it since April or May, 1833. I never saw articles made on the same plan before that time. I am an agent for the sale of the plaintiffs' manufacture: it has a very extensive

Cornish et al. v.

sale. The first time I saw any such materials manufactured by others than the plaintiffs was in October, 1834. The sale of that article has materially interfered with that of the plaintiffs.

Cross-examined by *Mr. Cresswell.*—I was appointed the plaintiffs' agent, in March, 1833.

Richard Hellaby sworn. Examined by *Mr. Sergeant Stephens.*—I am a wholesale lace-maker. I deal in elastic web; have done so for two years and a-half. I know the web for which Mr. Sievier has obtained a patent. I have purchased largely of the article No. 3. I purchased that kind of web of Messrs. Keene and Co. in 1834. The purchases were made by my foreman. I do not remember to have seen it before that time. If it had been in the market I should have been likely to have had it shown to me.

Cross-examined by *Sir F. Pollock.*—I purchased the intermediate web, the same as No. 3, from Messrs. Keene and Co. This is the article (the witness pointed to a striped specimen); it was this article made coarser. I do not think I ever saw that article before October, 1834. I never saw the article till I saw Mr. Keene's. I had heard of it before that time: so far as I know, there had been no dealings in my shop in elastic articles till three years ago. There have been things bought and paid for that I have not seen.

Re-examined by *Mr. Attorney-General.*—Though I did not give the orders, I saw the goods when they came in.

Samuel Balsden sworn. Examined by *Mr. Attorney-General.*—I am a tailor (some specimens of the woollen cloth made under the patent were shown to the witness). I consider cloth of that fabric might be beneficially used in making clothes for the working people, and would be serviceable for belts. If it were manufactured of finer cloth it would be applicable to many purposes. I never saw similar cloth before the patent.

Cross-examined by *Sir F. Pollock.*—I do not know the price. The utility, even supposing it cost a little more, would do a working man more service. If it were five or six times as dear he would receive five or six times the comfort. A man wearing this would not be confined in his labour. It is useful also in waistcoat sleeves, and such-like. I saw it first yesterday, and I gave my

Keene et al.

opinion that it was a most useful thing for labouring people.

Re-examined by *Mr. Attorney-General.*—I think it would last longer in consequence of its elasticity; it would not be so apt to tear: although I only saw it yesterday, I am sure it would be found serviceable.

John Cook sworn. Examined by *Mr. Attorney-General.*—I am a tailor; I saw that elastic cloth for the first time yesterday; I have been a tailor forty years; I should say that this article would be useful for a variety of purposes—such as the backs and sleeves of waistcoats.

Cross-examined by *Sir F. Pollock.*—I never heard of it before; it was ten o'clock yesterday (Sunday) night when I first had my attention called to this article; I am not aware that the specification has been out three years.

John Farey sworn. Examined by *Mr. Attorney-General.*—I am a civil engineer; I have for thirty years paid attention to the manufactures of the country ;I have read the specification of Mr. Sievier's patent, and I understand the three objects as described in the specification: I think the first is an useful object—it is for introducing elastic cords of india-rubber, covered with fine threads into the enlarged loops of hosiery goods, or stocking-fabrics, to form margins round the upper part of such garments, which being elastic, closes, which is a decidedly useful invention. It is a new invention, as made of cords covered with a platting of thread used and inserted in the loops of the fabric itself. There are parts of garments in which the second object of the invention would be useful. There is an elastic fabric now used by sailors which is found to be most advantageous clothing: it is a knitted fabric. If equal elasticity be given to woollen cloth, it would be a great improvement, inasmuch as it is not so porous to wet. This (the second object of the patent) would be equally elastic, and be impervious to water. The third object of the patent is for cloth not to be felted: it is an useful article—very useful; and is the article brought into the most general use: as far as I know, it was new at the time of taking the patent; that is, the threads covered with a platting, and interwoven with ordinary warp threads: those warp threads limit the extension to which the india-rubber should be pulled out; the non-elastic threads limit the elastic power of the whole fabric. The consequence of that is most important,

Cornish et al v.

because it enables the least quantity of elastic materials to be used, as those threads are the protection to its being overstrained; without any such protection, a greater quantity of the elastic materials must be substituted. The non-elastic threads being slack, they bear no tension till they are drawn out to a considerable extent, therefore they do not impair its elasticity, but increase its ultimate strength, and prevent breaking the article. No. 1, is composed wholly of elastic india-rubber threads, with a platting and cotton weft to tie them together. In No. 2, the india-rubber threads are not covered by a platting, they are covered in the weaving. This has a non-elastic warp used. In No. 2, the object of the non-elastic is to enclose the elastic strand; it makes a sheath. The longitudinal non-elastic threads are used as a covering for the elastic threads—it is a double cloth in fact. There is a cloth at the back of the elastic threads, and in front; and the elastic threads may be drawn out without disorganizing either of these cloths. No. 3, is made with the intervening non-elastic threads, forming a part of the warp, with the elastic threads covered with platting, and non-elastic threads intervening between them, form altogether the warp in the same plane; in fact, in place of being three (as in No. 2) they are one; they constitute one fabric. No. 3, is constructed on a different principle to No. 2 or No. 1, and No. 3, is a great improvement.

Cross-examined by *Sir F. Pollock.*—I first had my attention called to india-rubber webbing in 1829-30. I believe it was like No. 1; I was informed it was from France. My attention was first called to this matter with a view to give evidence on Friday; but I have had to attend to the subject generally before. I am aware that, in 1820, Mr. Hancock had taken a patent for the purpose of using a material of that sort in separate cases or sheaths. The first object of the invention is to introduce into stocking-fabric, strands or filaments of india-rubber, covered with platting. The specification says, "covered or not; but they must be covered:" I imply that it must be covered. In Hancock's, the sheath was superadded on the fabric after it was finished; in Mr. Sievier's the cord of india-rubber is knitted, and put through certain enlarged loops of the fabric; it is introduced in the making of the fabric itself. I never saw the second object of the patent till the other day (Friday).

Keene et al.

Re-examined by *Mr. Attorney-General.*—Would there be any difficulty in dressing that (No. 2) and putting nap upon it? It would be a coarse cloth when done; there would be no difficulty in doing it; I cannot say whether fine cloth could be made; it would require experiment to say; but I think it must be always cloth that has been very lightly felted, that it may be more elastic. In No. 2, the elastic strands are not covered by a platting, they are covered by the cloth.

Mr. Attorney General.—This is my case, my Lord.

Sir F. Pollock.—May it please your Lordships, and gentlemen of the Jury, I have to address you on the part of the defendants in this case.

The plaintiff says, I am the inventor of improvements in making elastic web. I will prove to you, in point of fact, that the very article was made by the defendants long before the patent, and I will prove it was made by other manufacturers, certainly not less than three, or four, or five. I will prove its existence in various directions and quarters. I will prove that these articles, similar to No. 4, were made before the patent, and I shall close the matter of fact by submitting to his Lordship, with the greatest possible confidence, that this patent is not sustainable after the patent which the defendants themselves took out in 1831. The present patent is taken for three objects. Now, gentlemen, I am not going to do the ungracious and unpopular act of quarrelling with No. 3, because Nos. 1 and 2 cannot be sustained, yet there is not a tittle of evidence that Mr. Sievier ever sold a single article of No. 1, or that it ever was made till within the last fortnight, and then it was made to prove, as a matter of form, that it could be used. The second object of the invention has only been made within the last few months, and the only persons called to prove its utility are two tailors, who examined the cloth "lately," —"yes, very lately indeed, ten o'clock on Sunday night," before the trial came on, within twelve hours, almost. Now, here again, gentlemen of the Jury, do not imagine I am about to attack the patent in the way in which Brunton's patent for chain cables was attacked; I act solely and exclusively for the purpose of giving character to the invention, and seeing what really is the conduct of the plaintiffs, and how far Mr. Sievier fairly entitles himself to the character of a great public benefactor. I now

Cornish et al. v.

come to No. 3; I call his Lordship's attention to what was stated by my friend *Sergeant Wilde*, and stated by more than one of the witnesses to the patent,—the principle, the scope, the aim, of the patent, and that upon which it rested for its title to your verdict. My Learned Friend described it as being a mixture of the two articles, elastic and non-elastic, in the same plane, and my Learned Friend puts it, that the circumstance of this mixture being in the same plane, is the point upon which the plaintiffs mainly rest. Now, gentlemen, I will read to you the object, and I will then read to you the manner in which that object is performed; I will not take up your time with objects first and second.

"The third object is to produce a cloth." I lay no stress on the word "cloth," because I understand, and I take it for granted it is so; "cloth" means anything that is woven, be it the narrowest tape with which my Learned Friend ties up his large bundles of briefs, or the wider cloth that is sold.—"The third object is to produce a cloth from cotton, flax, or other suitable material not capable of felting, in which shall be interwoven elastic cords or strands of india-rubber coated or wound round with a filamentous material."

That is all, gentlemen, "cloth from cotton, flax, or other suitable material not capable of felting, in which shall be interwoven elastic cords or strands of india-rubber, coated or wound round with a filamentous material." That is all the statement of the object: and according to that statement any piece of weaving (I beg to call his Lordship's attention to this), any piece of weaving, or any sort of which the only two materials to be formed, shall be of cotton or flax, or any other material, and elastic cords of india-rubber coated with filamentous materials would be within this patent. Is there anything said about being in the same plane? Not a syllable; that which my Learned Friend told you was the gist of the patent is not there at all. The object is to claim every fabric of every sort which can be called cloth, in which these strands of india-rubber coated can be introduced, and apparently in any way or any shape whatever, either longitudinally, or transversely, or both, or in any way, provided the cloth is made from a substance that does not felt, and there is a single thread of india-rubber coated or wound with filamentous materials. This patent applies,

Keene et al.

my Lord, if No. 1, had never been made before, No. 1, could not be made now, and it is not pretended this patent prevents from making No. 1. I do not know whether your Lordship sees this point.

The Lord Chief Justice.—Yes, I see what you mean.

Sir F. Pollock.—I say, gentlemen, distinctly, and I defy any person acquainted with the law of patents not to go along with me in this, that if No. 1, had not been made before, No. 1, could not be made on account of Sievier's patent of 1833, for No. 1, precisely falls within the object; in this way it is that "cloth from cotton, flax, or other suitable material, and not capable of felting, in which shall be woven elastic cords or strands of india-rubber coated or wound round with a filamentous material." There being nothing there about alternation—about being in the same plane or anything else. Gentlemen, I am now pointing out that, in the mode described, there is nothing about alternation or being in the same plane.

I have before me a previous patent taken by Mr. Sievier on the 1st of December, 1831, and the specification was enrolled some time in 1832.*

---

* The specification of this patent was as follows:—

"To all to whom these presents shall come, &c.—Now know ye, &c. —My said invention or discovery of certain improvements in the making or manufacturing of cables, ropes, whale-fishing, and other lines, lathe and rigger bands, bags, and purses, consists in the application or employment of filaments, threads, or strands of caoutchouc or india-rubber, to or for the making, manufacturing, or constructing of elastic cables, ropes, whale fishing and other lines, lathe and rigger bands, bags and purses; such filaments, threads, or strands of caoutchouc or india-rubber, previously platted over or covered with hemp, flax, silk, wool, cotton, catgut, Indian grass, strips of leather, or other fit and proper materials, part of which articles, when so manufactured, are applicable to various other useful purposes.

"As filaments or threads of india-rubber, covered with cotton, silk, and other materials, are now commonly used in the manufacture of many articles where elasticity is required, and as such filaments or threads are covered with the different materials by various kinds of machines applicable to the purpose, it is not necessary for me to describe any particular machinery by which the filaments, threads, or strands of india-rubber, required for the different articles to be manufactured in my improved manner are to be platted over, intermixed, or covered with the materials. I therefore shall only state generally, that the filaments, threads, or strands of caoutchouc, are prepared by cutting them from any convenient sized or shaped pieces of india-rubber into long strips, which are afterwards stretched to their utmost tension, and wound upon drums, reels, or bobbins, ready to be platted over or covered by, or interwoven with, the various materials before mentioned.

Cornish et al. v.

The Lord Chief Justice.—Enrolled in June, 1832.

Sir F. Pollock.—Your Lordship is right. If this does

"This may be done by any proper machinery, such as those used for making sash-lines, braiding, platting, or stay-lace machines, or any other machinery of the like description, which will cover the filaments, threads, or strands, with the different materials in the manner of winding, platting, netting, knitting, laying, or interweaving, or any such other kind of fabric or manufacture, which will allow of the filaments, threads, or strands, when so covered, stretching, or collapsing in their length to the degree of elasticity required, without injuring their tenacity.

"The filaments, threads, or strands, after being prepared by platting over, covering, or intermixing them with any of the different materials, as above described, either singly or mixed, are for the manufacture of any of the various articles above mentioned to be platted, netted, knitted, laid, or interwoven one with the other, by any kind of machinery applicable to the purpose, or they may be used in the same manner, without covering them with any coating of the different materials.

"The number of filaments, strands, or threads to be so combined, and the positions of them, depending upon the different kinds of article to be manufactured. For instance, in the manufacture of cables, ropes, or other articles where great strength and elasticity is required, the filaments may be passed through different machines, each machine taking the strand or cord of filaments, as prepared by the foregoing machine, and platting, netting, knitting, laying, interweaving, or otherwise combining any number of such strands or cords again into one strand or cord, and so on, until the article is composed of such a number of filaments, threads, or strands, as are necessary for its required strength.

"In order that my improved manufacture of the various articles above mentioned may be better understood, I shall proceed to describe the principle of constructing the same, that is, of the methods or manners in which the single filaments are combined, by laying, interweaving, knitting, or netting, so as to form the completed article, and I have hereunto annexed several diagrams, which will serve to illustrate the same, reference being had to the figures marked thereon; that is to say,

"Having prepared any number of the filaments or threads of the caoutchouc or india-rubber, they are severally to be coated or covered with any of the above-named, or other proper materials, by means of winding, platting, braiding, knitting or netting machines, or any other machinery which will cover them with the different materials, in such a way as to allow of their stretching or collapsing in their length.

Fig. 1, of the annexed diagram may be considered as an end view or section of one of these filaments or threads, as it would appear when cut asunder; seven or any other number that may be thought desirable of these filaments, are then taken and placed, as in fig. 2, and in the side view fig. 3, and are covered with a coating of any of the proper materials, by means of a platting, knitting, netting, winding, laying, or other machines, thus forming a strand or cord, which may be used as a sash line, whale fishing or other lines, lathe or rigger bands, according to the size of the filaments used. These strands

Keene et al.

not satisfy you, gentlemen, under the plaintiffs' own hand, that elastic strands of india-rubber covered with braiding

or cords of filaments, are also capable of being formed with others of a similar description into a cable rope, band, or line in various ways, either by placing them together in straight lines, and covering them with a coating of the various materials, knitted, netted, or platted, or wound upon them; or instead of being placed straight against each other, they may be platted, knitted, or netted, laced or interwoven one with the other, as figs. 9, 10, 11, and 12, or so connected together as to render an external casing or coating unnecessary.

"Figs. 4 and 5 shew seven of the strands or cords of filaments, as formed in figs. 2 and 3, which may be connected together by a coating of single filaments, as shown in side view fig. 6, or they may be covered by strands or cords of a greater number of filaments, or of cords or strands of the different materials above mentioned, or any other description of coating which will allow of the free action of the elasticity of the india-rubber. The interstices or space between the strands must be filled up with any suitable sized filaments or strands, prepared as above, as shown in fig. 5. Fig. 7, is a transverse section of seven of the strands or cords as found in figs. 4 and 5, connected together in like manner, so as to constitute a large rope or cable. Fig. 8, shows the spaces between the cords or strands filled up as described in fig. 5. Figs. 9, 10, and 11, are representations of bands or cords either round or flat, formed of a number of filaments, strands, or cords, connected together by platting or interweaving one with the other so as to allow of the band stretching and collapsing. Fig. 12, is a section of a rope or cord, composed wholly of filaments, as at fig. 1, without being combined, as above described, which may be covered, as above stated.

"My improved bags and purses are composed of knitting or net work, made of strands or cords of the filaments prepared, as above described, and which is capable of being made into purses or bags by hand; or the filaments, strands, or cords, prepared as above described, may be knitted, netted, or platted into purses or bags, by machinery or by hand. As there are so many descriptions of bags to which these improvements in the construction may be applicable, it is not necessary to state further, than that in any case where elasticity may be required, the bag or purse may be made wholly of the above materials, or only parts used; for instance, in making carpet travelling bags, I should only form the ends or edges of the bag of the elastic material, covered, when stretched to its utmost extension, with leather, or other suitable substance, which will be capable, on collapsing, of drawing up the leather, or other covering, into puckers or gathers, so as to allow of the bag enlarging very considerably, when any extra quantity of articles are put into it.

"Having thus described the process, and the kind of machinery which may be used for platting over, covering, or intermixing, the filaments, threads, or strands of caoutchouc or india-rubber, with hemp, flax, silk, wool, cotton, catgut, Indian grass, strips of leather, or any other fit and proper material; and also some of the modes or methods of combining such filaments, covered as above described, for the constructing or manufacturing of cables, ropes, whale fishing, and other lines, lathe, and rigger bands, bags or purses, I desire it to be particularly

Cornish et al. v.

had become the common property of every manufacturer in this kingdom:—If I do not satisfy you of that I will give up my cause. In Mr. Sievier's patent of 1831, he says he has "invented or discovered certain improvements in the making or manufacturing of cables, ropes, whale fishing and other lines, lathe and rigger bands."—Now if I show you that the lathe band which if made under this patent of 1831 most unquestionably embraces either the samples, No. 3, or sample No. 4, the present plaintiff is undoubtedly out of Court, and I think when the whole matter of this patent is before you—when the matter comes for your decision, my Lord—

The Lord Chief Justice.—If the article were made known to the public before, he is out of Court.

Mr. Attorney-General.—My Friend is upon the validity of the patent of 1831.

The Lord Chief Justice.—He says there is an article described in the patent of 1831, which is precisely the same as your No. 3, if he proves that, of course the second patent is invalid.

Sir F. Pollock.—I will read to you the specification of the patent of 1831. This invention "consists in the application or employment of filaments, threads, or strands of caoutchouc or india-rubber, to or for the making, manufacturing, or constructing of elastic cables and filaments of caoutchouc or india-rubber, being first platted over or covered with hemp, flax, silk, cotton, catgut, Indian grass, straps of leather, or other fit and

understood, that I do not wish or intend to claim as my invention, any part of such machinery used for so platting over, covering, or intermixing the said filaments, threads, or strands of india-rubber, as it is well known and in common use; and as any kind or construction of machinery capable of covering them, by knitting, netting, platting, or intermixing, will answer the purpose desired. Neither do I intend to claim the machinery, or confine myself to the manner or mode of combining such filaments, threads, or strands of india-rubber, to produce the articles above mentioned, as I am aware there are many other ways of manufacturing cables, ropes, whale fishing and other lines, lathe, rigger bands, bags, and purses, from filaments of caoutchouc, prepared as above described. But I wish it to be understood, that I do claim as my invention, the application of filaments, threads, or strands of india-rubber, in the making or manufacturing of cables, ropes, whale fishing and other lines, lathe and rigger bands, bags and purses, in the manner herein particularly described; and I verily believe that this, my specification, does in all and every respect comply with the proviso contained in the above-mentioned letters patent. In witness, &c.,

"ROBT. WM. SIEVIER."

Keene et al.

proper materials are applicable for various other useful purposes."—This is his statement.—"As filaments of india-rubber covered with cotton, silk, and other materials, are now commonly used in the manufacture of many articles where elasticity is required"—say you to Mr. Sievier, What have you under your hand said in 1831? That filaments or threads of india-rubber covered with cotton, silk, or other material, are commonly used in the manufacture of many articles where elasticity is required—In what, pray?—Why this, says Mr. Sievier; all the world, before caoutchouc was introduced, used web made of strands or cords of cotton; when india-rubber was introduced they then used precisely the same sort of thing, but they were all elastic. And now I claim a right exclusively to make some of them elastic and some of them non-elastic. This, I say, he cannot do; a man cannot take to himself that which is the common stock, if I may so say, of all the trading and manufacturing community; a man has no right in this manner to seize that and take it to himself. He must invent something which is new, and it is not enough to say you never before mixed these together; I will shew we have, I will shew his former patent points to mixing them together. I will shew that it was done by everybody. It is clear every one of these strands was not wanted for elasticity, and it was obvious an article cheaper might be made, and the specimen which I cut off yesterday was made long before Mr. Sievier's patent was even heard of, and it is the most unlikely thing in the world that it should not have been made. It is the most simple thing for any one to say, do we want the whole of these? cannot we make an article equally useful to the public and as cheap? It was done, and I will produce to you a specimen before even Sievier's patent was taken out. What, after all, is this description of the patent of 1833? what is his object? The object is to produce "cloth from cotton, flax, or other suitable material not capable of felting, in which shall be interwoven elastic cords." Well, Mr. Sievier, and how do you do this? Why, if his Lordship recollects the manner in which that is to be done, he will find it amounts to this, says Sievier, "I have taken out a patent for interweaving elastic strands covered with other material." Well, Mr. Sievier, and how do you do it? Why, Sir, I do it;—well, but how

Cornish et al.

do you do it? Why, Sir, I do it, and that is the way. Gentlemen, I appeal to your good sense if you will take a copy of this specification, and ask yourselves whether this is not a fair, just, and perfectly correct statement of Mr. Sievier's specification. I call your attention to this—read what he intends to do, and then read the manner in which he professes to do it, and I appeal to his Lordship whether I am not perfectly correct in stating that there is no process described, that there is no art, that there is nothing new stated, and when you come and ask Mr. Sievier, how to do it, he answers, literally, "I do it!" It is of importance I make this perfectly intelligible, and I beg, gentlemen, now that you are aware of the history of this, and you find so far back as 1831 he himself possesses these covered strands of india-rubber. But, gentlemen, I have a most important body of evidence which I shall shortly open, because, of course, the effect of that testimony must depend on whether you believe the series of facts I shall lay before you: I will state a word or two on the facts as I open them to you. Now, in the first place, there is a piece of web cloth or whatever I am to call it.

The Lord Chief Justice.—Call it, A, that is the one that Mr. Rogers, the plaintiffs' witness, said was the same in principle with No. 3.

Sir F. Pollock.—Yes, my Lord.

The Lord Chief Justice.—If you prove that was made and publicly sold before the date of the patent, there is an end to the cause; their own witness states it to be on the same principle.

Sir F. Pollock.—It is composed partly of cords of cotton that are non-elastic, partly of cords of india-rubber which are elastic. Now it is not denied that before any body introduced a patent at all upon this subject, a web of this description made altogether of these cotton strands was manufactured. It is not denied that No. 1, was made with all the strands elastic, but, says my Learned Friend, you must make them all one way or all the other, all the materials are the common property of every weaver, but you shall not mix them. I will call before you the man who made this (that marked A), not our own man; I don't mean to say we made it, but I mean to say a workman made it in the year 1831, and here is all this quantity of it. Gentlemen, here is a piece

Keene et al.

corresponding with that which was handed in yesterday, marked, W A, and there was another marked, W, both came from Wood and Westhead's of Manchester, before the date of the patent; this piece W A, has been unravelled to enable the witness, Mr. Rogers, to see of what it was composed. Here are two more pieces, which I shall prove were made at Wood and Westhead's, as far back as Christmas, 1832; there was another piece which we cannot find, which also came from Wood and Westhead's; that piece was marked, W, it has been since lost. I will show you some of the same sort; I will prove at least five or six instances of previous making; I will prove that Newman, Collins, Ducoron, Chaplin, and another person, all made an article in which there was intermixed threads or cords non-elastic; and, gentlemen, the probability of proving this is so great, that even if I were not capable of proving it by positive testimony in these various directions, I think you would come to the conclusion that it certainly was so, that it must be so. The case on the part of the plaintiffs is this, Lindsey comes to swear that the defendants did not make any such article, and some other persons come to state that they don't think anybody else did or else they should have seen it. I shall certainly contradict Lindsey. (The Learned Gentleman then, by means of models, explained the nature of the machinery used, and the alterations made therein, when it was desired to weave intermixed strands of elastic and non-elastic threads, and stated that he should prove a loom was so altered in the defendants' factory in 1832, for the purpose of weaving such web, and that the plaintiffs' patent was not sealed till January, 1833.) The Learned Gentleman then went on to say,—I can prove Messrs. Keene and Co. had actually made this machine, and worked at it, and that a variety of persons in all directions had done the same; I shall show that the defendants, so far back as 1832, had put themselves in a condition to do this work, and had actually done it; it matters not whether they had brought it to precisely the same degree of perfection or not.

The Lord Chief Justice.—Mr. Attorney-General, how do you distinguish the present discovery from that stated in the specification of 1832? I take the present patent to be taken for a new invention of weaving together elastic filaments that have been covered or coated, and also strands

Cornish et al. v

of either cotton or other material. I find in Sievier's specification made public in June, 1832, that he made rigger-band; now he describes one mode in which this is to be effected by the word "interwoven." Interweaving what? He has already described one of the materials, the filaments of india-rubber, which are to be covered. Then he says, "these are to be *interwoven.*" If you look at the different passages in which the word "interwoven" occurs, you will find it applies to the same purpose, and what is this but interweaving?

Mr. Attorney-General.—With submission, my Lord, I can, in a few words, point out a material distinction between the specification of the patent of 1831, and the specification of the patent of 1832; there are to be the elastic and non-elastic working separately and independently of each other, not merely that the elastic should be covered, and that there should be a combination of elastic and non-elastic, so that the whole should form one mass, as if there was a rope or cable, a cylindrical rope or cable to be formed, that is the specification of 1832. In the specification has been described the elastic and non-elastic in the same plane, working independent of each other, so that they may be contracted, the one independent of the other. In the specification of 1832, the combined materials are to be interwoven. Now, what is to be interwoven? Let me respectfully beg your Lordship's attention to that. Why, it is the filaments, threads, or strands of india-rubber that are to be interwoven. "The filaments or strands, after being covered with the different materials above described," are then to be *interwoven.* This, your Lordship will see, exactly describes No. 1, where there would be a number of parallel strands of india-rubber, each covered, but there are no non-elastic strands to be interposed between them. That is the distinction, my Lord; what are to be interwoven are not filaments of hemp or silk, but are the filaments of india-rubber so covered. If those are the words which raise the difficulty in your Lordship's mind, I trust it is removed.

The Lord Chief Justice.—I will not stop the case here.

Sir F. Pollock.—Allow me to say one word. It says, "the filaments, threads, or strands, after being prepared by platting over, covering, or intermixing them with any of the different materials, as above described, either singly

Keene et al.

or mixed, are for the manufacture of any of the various articles above mentioned, to be platted, netted, knitted, laid, or interwoven, one with the other, by any kind of machinery." Now, my Lord, if your Lordship looks at the third object—

The Lord Chief Justice.—Yes, it comes very near, so near that you can hardly distinguish them.

Mr. Cresswell.—We put in Hancock's specification, filed on the 8th of August, 1820.*

Isaac Newman sworn. Examined by *Mr. Cresswell.*—I am a spring-maker; have been in that trade twenty-six years. I know a person of the name of Godby; I have been employed by him as a spring and india-rubber web maker. I first turned my attention to india-rubber webbing in 1831. I made web of elastic and non-elastic threads combined, at the suggestion of Mr. Godby; I made one piece with a white middle and green edge thread, and thread that is elastic and non-elastic, in May, 1832; the white was elastic, the green non-elastic. I made two or three pieces; I sold the majority to Mr. Godby. I made web of elastic and non-elastic in plain drab. Those pieces of combined web were both manufactured and sold by me in 1832 to Mr. Godby.

Cross-examined by *Mr. Attorney-General.*—I have no specimen of any such web manufactured in 1832; I have not tried to get any. I continued to manufacture that description of web till the beginning of 1833. I found this manufacture quite the reverse of an improvement to what I had before done, and calculated to bring the thing into contempt, neither having the elasticity nor the firmness required,—that is my opinion; I therefore gave it up. I wove web for braces on the original principle, making them all elastic; I did that till within the last year and a-half; I have since been engaged in the gut line, which is a staple commodity. I have been engaged in that twenty-eight years. It was Mr. Godby who suggested the thing to me. Godby advised me to make the experiment, and I went on making experiments. The experiments did not answer, in my opinion, and I gave it up. I made numbers of articles and threw them away.

---

* This invention was for sewing india-rubber between fabrics; it had nothing whatever to do with weaving india-rubber into fabrics, and really had nothing to do with the subject; it is, therefore, not thought necessary to give the specification.—W. C.

Cornish et al. v.

I went on making experiments till I found this plan would not answer, and I gave it up.

Re-examined by *Mr. Cresswell.*—I made it for braces and garters.

The Lord Chief Justice.—He thought the one he made in 1832 was calculated to bring the old one into contempt. I suppose he meant the new one was not so good as the old, thus that the article he made would bring the thing into contempt.

Mr. Attorney-General.—Would bring the india-rubber into contempt.

The re-examination continued by *Mr. Cresswell.*—With all these samples before me, I still say the same, that they would be contemptible, they would condemn any braces, they have too much elasticity, no power.

John Cotterill sworn. Examined by *Sir F. Pollock.*—I am a weaver; have been so twenty years. I first manufactured elastic web in 1831, for braces and garters. I made this elastic web in 1831, in November: it is of elastic and non-elastic mixed. The strands are all elastic except the white.

By *The Lord Chief Justice.*—How do you know it was in November, 1831?

Witness.—My two children died then; I have the certificate in my pocket. It was then I commenced making the web.

Examination of the witness continued by *Sir F. Pollock.*—I do not know of any other person having made such web; I did it myself. I have seen a great deal since, but none before. The article did not answer; I left off making; I offered it for sale repeatedly, I could not sell it; I therefore went back to my own business again: I made thirty yards altogether; I did not think it a new invention, it was a simple thing.

Cross-examined by *Mr. Sergeant Wilde.*—I worked for myself in 1831. I never sold any of this make; I have never sold it. I brought it here yesterday morning. Mr. Newman applied to me on Saturday. I never offered it to Messrs. Nickels and Co., in 1831. I was ashamed to offer it to any one. I was six months working at this article, on and off. The thirty yards would only take a few hours making. When I found it did not answer, I threw it by. I worked for myself five years. I had seven looms. I can tell the names of the workmen, but I do not

Keene et al.

know where to find them. I call myself a brace-weaver.

Re-examined by *Sir F. Pollock.*—This is not so strong as No. 1, it would not last half so long; it is cheaper than No. 1.

Thomas Godby sworn. Examined by *Sir F. Pollock.*—I am a brace-maker; I have been in the trade four or five years; the first specimen of elastic web brought to me was in 1830. I never saw a web which had elastic threads with cotton between them, till I had it made for me in 1832; a person of the name of Newman made it for me. It was some india-rubber threads, and some cotton left between them to make it come cheaper; I suggested the idea. Newman never made me any great quantity. I used it for braces; it was cheaper: some was more and some less elastic. I suppose that was because it was not well manufactured. They were paid for in April, 1832. I showed the article to Mr. Cornish; I furnished him with a bit of it. Mr. Cornish had at that time a manufactory. He called at my shop; it was either at the end of 1832 he called on me, or the beginning of 1833. Mr. Cornish came into the shop and saw some of the article, and said, "This is a queer looking article, Mr. Godby." I said, "It is a cheap article." I cannot say whether any person acquainted with this description of article could perceive, at a slight examination, that it was made partly of the one and partly of the other. I gave him a piece. He said he thought he could make it better. I told him if he did make it, I should like to have the first offer. I saw it at Mr. Keene's before the plaintiffs' patent of 1833. I bought a quantity; it was in May, 1833. The first I got from Mr. Punton was in April, 1834. No. 4, is nothing near so good as No. 1.

Cross-examined by *Mr. Attorney-General.*—I sell a good deal made on the principle of No. 4. I have no doubt it has very much supplanted No. 1. I have bought a good deal from Messrs. Cornish and Sievier; for some trades it answers better than No. 1; others will not have it. I can dispose of more of No. 4, than No. 1; it is twenty to twenty-five per cent. cheaper. I bought goods of this description of Mr. Harborough. I asked Newman to make it with less india-rubber, it did not answer very well: he gave it up; I suppose it did not answer. I suggested that the strands should be braided.

Re-examined by *Sir F. Pollock.*—I made twenty pur-

Cornish et al. v.

chases at least of Newman, and am certain it was in 1832. I consider that the reason of selling a larger quantity of No. 4, than No. 1, is solely its cheapness.

Daniel Collins sworn. Examined by *Mr. Cresswell.*—I am a manufacturer of brace webbing, and was so in 1832; I have since given it up. I made the original india-rubber web all rubber; the threads of india-rubber were braided; I braided it myself. I afterwards made it with india-rubber interwoven with cotton; I mixed them, first some elastic, then eight or ten cotton, all combined together in the same plane. It was by mere accident that I did so in trying experiments. I did not succeed in making any fit for the market; I sold thirty yards; I did not sell it myself, I employed a person of the name of Chaplin to sell it for me; I received the money for it. That was the only lot I sold; it was not, in my opinion, so good as with all elastic, but cheaper. I afterwards continued to make all elastic, I made no more.

Cross-examined by *Mr. Attorney-General.*—I only made one experiment, and that did not succeed. I found it would not answer my purpose, and I gave it up. I abandoned it and went to the old method. I made this experiment in 1832, as near as I can guess it was in October. I can swear it was not in 1833. I sold it to William Chaplin. I have none of it to show; the article at that time was thought nothing at all of. All india-rubber must be best for all purposes. I have been a braiding-machine maker since I gave up making brace webbing. I am a master, not a journeyman. I cannot say what it was that brought it into my head; I am not a weaver. When the elastic thread broke, the machine would go on without the rubber; that was, when I was making braiding the thought came into my head; that is how I came to think of it, through the elastic thread breaking; this was when the elastic thread breaks in braiding, and then made the experiment with the loom, and I found the experiment did not answer.

The Lord Chief Justice.—This is not like an experiment in a man's study or closet, which, if it fails, there is an end of it; but this went into the world such as it was.

Re-examined by *Sir F. Pollock.*—I made it. I am not a perfect weaver, yet still I can weave a little. The thread often breaks in braiding. I am quite sure it was in 1832.

William Chaplin sworn. Examined by *Sir F. Pol-*

Keene et al.

lock.—I have been a weaver for forty-two years. Collins gave me some web to sell on commission in 1832. I think it was in November; there were thirty yards. It was made with what we call the intermediate elastic and non-elastic threads. I am quite sure that it was so. I sold it to William Lennard, of Goswell-street-road, a brace-maker. I sold it at just half the price of the general run of elastic web at that time. It did not answer nearly so well as the old stuff; I have made similar myself. It was before, I said that it was in 1832. I made mine in May; Collins gave me his in November. I have none left, I sold it to William Lennard, a customer. It never was nor never will be so good an article for braces.

Cross-examined by *Mr. Attorney-General.*—I did not want any one to put such a thing into my head, I invented it myself. It was in the month of May, 1832, on the 5th. It was as likely to be at night as the day; it might be in bed. I often think of these things lying in bed, as in the day. I really believe I was lying in bed at the time; I will not swear that I was, but I think so. I am a married man, and have thirteen children. When I got up I immediately set to work. The same loom will do for either mode of working equally well. When I got my warp in, I set to work the same day. I made fifty yards. I was two days making it. I did not like my work; it had not the substance of all elastic. I sold it to Lennard. I do not know where Lennard is, I wish I did; he owes me nearly nine pounds. I was first found out by Collins, on Saturday night last. I never made any more of this; I found it would not pay. I employed myself in weaving and in selling by commission. I have sold web to Mr. Rogers, but never offered him any of the experimental web. I offered it to no one else than Lennard. In May and November I was supplying Rogers with the largest quantity of another article, but not india-rubber.

Re-examined by *Sir F. Pollock.*—The web I made was better than this. I sold fifty yards in May, and that of Collins in November.

Joseph Alexander Ducoron sworn. Examined by *Mr. Cresswell.*—I have been for some time a manufacturer of elastic web in this country. I commenced in 1829. The first elastic web was all rubber; the strands were braided before putting on the warp. I made web of strands of elastic, and some strands non-elastic. I began in 1829, and must have made a piece of that kind in 1830. I had

Cornish et al. v.

a Frenchman of the name of Descombes in my service; he left me in 1832. He was employed in manufacturing web of this description, elastic and non-elastic. I have a daughter that assists me; she was taught to weave by Descombes. I remember seeing that pattern in the loom (pointing to a red pattern). That was made by Descombes. I searched for a pattern, and found that the piece of elastic is placed by the side of that which is non-elastic, that is, the warp is composed of them, and the weft binds them together. It is not so good as all elastic. I made very little; it might be three or four yards as an experiment.

Cross-examined by *Mr. Sergeant Stephens.*—I made it entirely as an experiment, only three or four yards. I did not like the result of the experiment; I considered it an inferior article. The rubber was braided before put in. I found that specimen two or three days ago. I found this in a drawer with other patterns. I cannot say how it came there; the other part of the three or four yards must have been sold; I think so; I will not swear it.

Re-examined by *Sir F. Pollock.*—I remember this was a piece I made.

Miss Florence Ducoron sworn. Examined by *Sir F. Pollock.*—I am the daughter of Mr. Ducoron. My father had a Frenchman in his service of the name of Descombes; he left in 1832, in April or May. Descombes instructed me to weave. I remember his making the red specimen, of which this is a bit. I assisted my father to find it. We found it in a drawer with other patterns. It must have been made in December, 1831, or January, 1832. There is cotton between the india-rubber. Descombes and my father made many experiments which I do not recollect.

Cross-examined by *Mr. Attorney-General.*—They made experiments. I knew they were making an experiment of this kind. My father considered it too weak. It would take from half-an-hour to an hour to make three or four yards of that stuff. I cannot say whether it was cut out of the loom; I do not remember seeing it out of the loom. I have seen some that must have been of the same piece, all elastic, without cotton between. There never was but one piece made to my knowledge. I saw Mr. Descombes make a red piece, which must have been the same piece of which this must have been cut off, but at the time I did not notice whether it was all india-rubber, or had

Keene et al.

cotton between; I never examined it till I saw that pattern in the drawer.

Re-examined by *Sir F. Pollock.*—It must have been of the piece he made; there never was but one piece of this red stuff made to my knowledge.

Mary Thomson sworn. Examined by *Mr. Cresswell.*—I have been in the employ of Mr. Ducoron. I remember the Frenchman, Descombes; he left in 1832. We have braiding-machines and looms in the manufactory. I braided that coloured india-rubber, but only one lot; it got the nick-name of the dirty red. I remember it quite well. I did not see it in Descombes' loom, nor did I see the web made.

Cross-examined by *Mr. Sergeant Wilde.*—I still work for Mr. Ducoron; I do not know how long it would take to braid a quantity for three or four yards. I do not know how long I was engaged braiding that dirty red; perhaps a week. I cannot say how much it would produce.

John Harborough sworn. Examined by *Sir F. Pollock.*—I am a brace-manufacturer. I am agent to Messrs. Wood and Westhead, of Manchester. I have been so three years. I believe they had some connexion with Hancock. I know a woman of the name of Richardson; she suggested to me that she would make webbing in the same way that I was using the brass springs. The webbing is first made, and the brass springs are put in afterwards; but her plan for making the india-rubber webbing was, to reel the india-rubber with it at the same time with silk or cotton. I sent her to Manchester, to Messrs. Wood and Westhead. I received the article afterwards; that marked W A, is not the one, but it was precisely similar, but broader; I believe that that piece marked W A, was sent to me by Wood and Westhead; but it has been pulled about since I had it. I received two widths, an inch and half-an-inch wide; I cannot state from memory the quantities I received; I should think not more than five or six yards; it came as a sample in 1833; the first date I can refer to is the 9th of March, 1833. I have a letter dated on the 2d of January, 1833, in which I received a sample of light web; it was alternate, that is, one india-rubber braided with one of cotton. I received this piece of web in January, 1833; but I did not sell goods of that description, I should think, for twelve

Cornish et al.

months after. The sample-piece I received in January, 1833, was not more than eight or nine inches; I have had it in my possession ever since, till Mr. Morris (the defendant's solicitor) received it of me. The specimen was marked w.

Cross-examined by *Mr. Attorney-General.*—I received and opened the letter of the 2d of January, 1833, myself; no one saw it before me. I do not know that the pattern came in the letter; the piece might possibly be wrapped in paper. The pattern was in a drawer, to which no one had a right to go; it was not locked. I do not think any one saw it. I do not recollect having any goods manufactured on the principle till October, 1834. I will not swear that that which I received in January, 1833, was not some yards, instead of a few inches, but to the best of my recollection it was not more than a few inches. If I received more of that pattern, I do not know what has become of it; I sold none of it; I know what the letter says, "a few yards," and am surprised; I remember it was only a small piece. The pattern was new, as far as I know, at that time; I have had a great deal of it since 1834, and it is now in great demand; I only recollect that it was a small quantity. I know the letter says a few yards, and that is what puzzles me. If I received a few yards with that letter, it must have been another specimen.

Re-examined by *Sir F. Pollock.*—I do not know for certain when I received this from Messrs. Wood and Westhead: I have no invoice.

Mr. Attorney-General.—Don't you know that Wood and Westhead have taken a license from Mr. Cornish?

Sir F. Pollock.—I object to that question; he must know it from my client.

Mr. Attorney-General.—I submit it is a fair question; the witness is an agent of Wood and Westhead.

Lord Chief Justice Tindal.—You must prove the license in writing.

Re-examined by *Sir F. Pollock.*—I have two specimens before me. It is not generally called one and one, nor was the specimen that came in that letter, or came with it at the same time the one and one.

Benjamin Nickels sworn. Examined by *Mr. Cresswell.*—I am a machine-maker; I am brother to the defendant; I remember my brother going into partnership with Mr. Keene in July, 1831. They then began to make elastic

Keene et al.

web; they manufactured this web, india-rubber with cotton braided over, that marked No. 1. I altered an old machine according to that model; it was at the end of April, or beginning of May, 1832; it was at work before June; it was made to intermix cotton threads with elastic threads. The elastic threads were braided first; a man of the name of Walter Hall first worked this loom. I saw him work day after day with a warp, with the cotton strands intermixed with braided india-rubber strands; that was in June, 1832. I remember the specimen marked K, being made; Walter Hall made it in June, 1832; it was intended for garters. I know there was more than fifty yards made—much more of that web.

Cross-examined by *Mr. Sergeant Wilde.*—Walter Hall had been weaving, before Lindsey came into our employ, three or four months. Lindsey was a weaver; the web, K, was made by Walter Hall. I know that what was made was sent to the warehouse in Goldsmith-street. That piece was a fag, and it was given to me; it was given to me to make a pair of garters of; I have kept it in a chest of drawers in my own house. Hall continued to work on the same principle at the loom, but not on the same pattern as that (K). I cannot say how much he made besides the fifty or sixty yards; his loom was in a room by itself; we kept our experiments to ourselves. I considered that a new thing; I did not consider it answered; our house had such a demand for the best work, that they gave it up; it was of no use to make an inferior article; they began to make again in 1834; Lindsey and Hall worked at the same factory. I should say Lindsey and Hall are much about equal as weavers; I would as soon employ one as the other. We had but three looms at that time, and they were at work upon the best web. I dare say an ordinary weaver might so alter a loom as to try the experiment of making the intermixed web.

Walter Hall sworn. Examined by *Sir F. Pollock.*—I am a weaver; I am in the service of Keene and Co.; I first went to them a week after Easter, in 1832. I was then employed to superintend the braiding-machines till six o'clock in the evening, afterwards I had an opportunity of weaving as long as I liked for over-hours. There was a machine altered in that year; the alteration was to make the piece marked K. It is composed of elastic and non-elastic; I made it in 1832. I do not know how much

Cornish et al. v.

I made; I also made some similar—many;—I worked in a room to myself; it was a secret; no one else entered the room but me and Mr. Nickels. The first piece I made was all elastic; I do not know how much I made of the elastic and non-elastic combined.

Cross-examined by *Mr. Attorney-General.*—Lindsey did not teach me to weave; I did not know anything of weaving elastic goods till I went to defendants'; but I was well acquainted with weaving in general. I went twice to the plaintiffs' to seek employment; it was in July, 1833, after I left the service of the defendants; I did not then ask Lindsey to instruct me in weaving. I know a person of the name of Charles Davis by sight, but not otherwise; he was at plaintiffs' when I went to ask for employment. I told him I did understand weaving; he told me that plaintiffs would not engage any but weavers: I said I did understand weaving, and did not want teaching. I did understand it, but would have nothing to do with it. I gave Lindsey instructions; I told Lindsey, in August, 1834, or July, 1835, that I had been employed in making goods like K. I made it before Lindsey was engaged by defendants; he came in November, 1832. I described to him what sort of an article it (K) was, and several others. I was selected on account of my skill, by Messrs. Keene and Co., to make these experiments. I did not try to make the article, K, in the common loom, without the alterations; it might be made in the common loom. I manufactured combined elastic and non-elastic threads into web, in 1833, in January and February; I am now employed in superintending the braiding-machines; I like it best.

Re-examined by *Sir F. Pollock.*—Defendants have two factories; I have been at both; on my oath I made that article, K.

The Foreman of the Jury.—Do you think, my Lord, we need hear any more evidence with respect to the manufacture of the web on the intermediate principle?

The Lord Chief Justice.—That is the point, whether you consider it a new invention by the patentee.

Mr. Attorney-General.—I shall call evidence in reply when we have sifted this.

The Lord Chief Justice.—We shall see that; at present I think the case is strong.

Sophia Wray Evans sworn. Examined by *Mr. Cress-*

Keene et al.

well.—I have been in the employ of Messrs. Keene and Co. four years: I was at the factory. I remember Mr. B. Nickels making a loom; I made the harness for it. I helped Walter Hall; it was in September, 1832. Walter Hall used it when it was finished. That piece, K, was made by Walter Hall; it was after I had been employed in making the harness; it was the same year that I made the harness.

Cross-examined by *Mr. Attorney-General.*—It was in September, 1832, I helped to make the harness; it was June when the work was made. It was after I helped him to make the harness; it was in September, 1832, I helped to make the harness. Walter Hall came the same year as I did; I came first; I came at coronation time—that was in 1831; now I come to recollect, it was that September when I helped to make the harness.

Joseph Sims sworn. Examined by *Sir F. Pollock.*—I have been a commission agent since 1825, in Wood-street, Cheapside. In 1832, I received some india-rubber web from Mr. Furlow, who was in the employ of Messrs. Keene and Co.; he is since dead; I am sure it was in 1832, in September or October; I should think he brought forty yards; I sold some of it to make garters. I call it combined web; I mean a mixture of cotton with india-rubber warp. There was another piece, black, as much as the other; I have no doubt that that put into my hands for sale by Furlow, was like that marked K.

Cross-examined by *Mr. Sergeant Stephens.*—When Furlow asked my opinion, I told him it would depend on the price, whether it would sell; my opinion was then that it must be sold at considerably less price; I sold some to Mr. Davis.

Mr. Rees Davis sworn. Examined by *Mr. Knowles.*—I am a warehouseman. In 1832 I knew Mr. Sims; I bought six different pieces; amongst them was this, K. My ledger shows it to be the 10th of October, 1832.

Cross-examined by *Mr. Attorney-General.*—I gave that piece to Mrs. Ager to make garters. She was in my employ; it was made into garters; I sold the garters.

Mrs. Ann Ager sworn. Examined by *Mr. Cresswell.*—That article was part of some elastic web given me to be made up into garters by Mr. Davis (the piece was produced); it was in October, 1832.

The jury, on examining the article, stated they thought it identical.

Cornish et al. v.

Cross-examined by *Mr. Attorney-General.*—I have never made up any other web than that made by Keene and Co. I have made up great quantities since for Messrs. Keene and Co.; I do not always keep a pattern. I was not aware, till the last day or two, that I had kept a pattern of Mr. Davis's, when I was looking for it. I was told the pattern was wanted, and I sought for it. I found it in my son's box; I found it there on Sunday last; I have seen it there before. I made it up in the month of October, 1832; that I can take my oath of.

Re-examined by *Mr. Cresswell.*—I was asked on Saturday to find it, and I searched.

Sir F. Pollock.—That is my case, my Lord.

Walter Hall recalled and examined by *Mr. Attorney-General.*—There might be a person of the name of Danston in the employ of Messrs. Keene and Co.; he never taught me anything about tumblers and counter-meshes; there are such terms in the trade, I have known them for years. There was a person of the name of Pigot, in Mr. Keene's employment. I do not know that Pigot came from Cornish and Sievier.

Mr. Attorney-General.—It is my duty to call important evidence in reply.

Robert Cox sworn. Examined by *Mr. Attorney-General.*—I purchased some goods of Mr. Godby on 31st of May, 1833; it was called a job lot; I am not aware I ever bought any other. I made the purchase in behalf of Mr. Lee; I am acquainted with the nature of the alternate web. I cannot say any of those were of that quality; what I recollect of them was, that they were of the original quality. The first time I ever saw the alternate was two years ago. I paid the usual price of the market; there was no distinction pointed out by Godby.

Cross-examined by *Sir F. Pollock.*—I did not hear Mr. Godby's evidence. I was sent for between three and four o'clock; I have referred to my ledger for the date. I examined them as braces: I know the difference in the web. I did not examine to see whether they were of alternate web. I say they were not of alternate web. I never saw the article till within these two years; when I was sent for, I was asked no questions about the web; all that I came here to answer was, to having purchased of Godby.

Re-examined by *Mr. Attorney-General.*—I was well acquainted with the original article; those I purchased of

Keene et al.

Godby were on the old principle. I have not any doubt about it.

Charles Davis sworn. Examined by *Mr. Sergeant Wilde.*—I am employed at the plaintiffs' factory. I remember Walter Hall coming; he told me he had been used to braid, and he would do nothing else. I told him that we only wanted weavers. He told me he could not weave: he came again; I told him we could not employ him, because he could not weave.

Cross-examined by *Sir F. Pollock.*—Men are paid higher for weaving than braiding; weaving is double. We could not employ him because he said he knew nothing about weaving.

George Danston sworn. Examined by *Mr. Attorney-General.*—I have been in the employment of Messrs. Keene and Co. I know Walter Hall; he applied to me in April, to show him how to enter some small work in a loom; he told me it was going to the trial; it was going to be prepared to take into Court, at the trial. I wrote a *tick* on the paper, which he could not understand; a *tick* is the rising of the loom in different ways. I gave him an explanation of it. He asked me what those were at top; I told him the tumblers. I showed him how the parts were worked. From our conversation, I am of opinion he did not understand weaving, that he was as ignorant of it as a child.

Cross-examined by *Sir F. Pollock.*—I came here to prove that Walter Hall is no weaver.

George Lindsey recalled and examined by *Mr. Sergeant Wilde.*—Walter Hall was in the employment of Messrs. Keene and Co.; during the time I was there, he was engaged in the covering department. I should think he did not understand weaving. A short time after I was there, Mr. Nickels showed me a loom in a private room, in which was a loom on which work had been attempted to be put on. I am confident no weaver could have attempted to have put it on. The loom was tied up in a very unweaver-like manner; the person who did it could not understand weaving. Hall never told me of having made any such thing. The day after Hall had been at Mr. Sievier's, and had been rejected, he asked me if I could give him sufficient instruction to enable him to satisfy Messrs. Cornish and Co.

Mr. Attorney-General.—This is my evidence in reply.

Cornish et al. v.

Mr. Cresswell then called the sister of Walter Hall, who swore that her brother had been instructed how to weave, but he never took kindly to it.

Sir F. Pollock replied on the fresh evidence.

Mr. Attorney-General.—May it please your Lordship, and Gentlemen of the Jury, I have now the honour of addressing you in reply in this very important case. Gentlemen, monopolies, strictly speaking, in the proper sense of the word, are detestable things; and I am happy to say, they have not existed in this country for a period of two hundred years; but how great is the difference between monopoly and giving reward to ingenuity, skill, industry, and perseverance. You will see whether there has been any improvement, and whether that improvement has been made by the person who claims the benefit, and you will rejoice that he should have the reward of his spirit, of his perseverance, and intelligence. There was an Act introduced in the last session of Parliament by Lord Brougham, and is now the law of the land, by which very great benefits are conferred on patentees, and which, if this action had been brought after that law was in operation, would have cut off very much of the effort that has been made to destroy this patent; you are, therefore, Gentlemen, without any leaning against a supposed monopoly; I would say you must have a leaning in favour of a patent, but you are to see that the patent is founded on discovery. Your understandings have been opened, and are still open to conviction, up to the last moment that your verdict is pronounced; but I venture to ask you now, whether the case that we made out on Monday last was not a case extremely strong, and required a clear and distinct answer? We proved the value of the invention, by a great number of witnesses of undoubted character, and without any interest whatever, and without bias one way or the other, and by various persons in this trade who have an interest, whose interest, if they were not honest men, might lead them to do what they could to destroy the patent, that they might manufacture for their own benefit; their evidence is, therefore, to be taken with more respect than that of witnesses who come to break down what they call a monopoly. I proved, by a number of witnesses belonging to the trade, that down to 1833 no such manufacture was known. My Learned Friend cross-examined for hours together, to show there

Keene et al.

was no essential difference between them, till at last you, gentlemen, saw the difference. You analyzed each number, and you saw that No. 3 was essentially different from No. 1. This manufacture took like wildfire when once it came into the market. The advantages struck all mankind; it beat the others out of the market. Indeed Messrs. Keene themselves said they found they could not go on manufacturing the old article. I, by scientific witnesses, proved the great advantages of this description of manufacture. My Learned Friend endeavoured by cross-examination to underrate that evidence: he failed—signally failed. There cannot be a doubt that in a few months, probably by means of the publicity of this trial, this article will be so generally known that there will not be an hospital into which this article has not been introduced. My Learned Friend says, "Let Messrs. Keene and Cornish have it for medical purposes, but let us have it for braces." You see this would just be the wedge; let me get in the corner, and I will soon get in the whole of it; I accomplish my object. It is more plausible to try it in the way of braces than in the shape of medical bandages, because Nos. 1 and 2 have been used in that way. Gentlemen, we have proved the infringement, without question, in October 1834. It was in October they determined that they would set the patent at defiance; and I ask you, when you left the box on Monday night last, was not the impression on your mind, that unless a strong case and a clear answer were given to the case we had made, to find a verdict in our favour? My Friend allowed we had made a *primâ facie* case: notwithstanding his flying at every thing, he did not dare to ask his Lordship for a nonsuit. He admitted we had made a case that required to be answered. *Sir F. Pollock* said he would be ashamed to attack the patent through an objection to No. 3, if we succeeded in proving objects Nos. 1 and 2. He afterwards again and again tried to pursue and throw not only prejudice upon object No. 3, but directly attacked the validity of the patent with regard to the evidence that would be given upon the one and upon the other. Now, Gentlemen, this is the manner the defendants have put their defence on record: that defence ought, therefore, to be regarded with the greatest suspicion. When there is a good defence to an action on a patent, a tradesman-like defence, in the good sense of the word, it is easy to

Cornish et al. v.

state it—it is easy to prove it; but when a certain combination is made to overturn a patent right, every chance is to be taken, every advantage is to be pursued without regard to law or justice. Gentlemen, I must do the solicitors of the defendants justice to say, that they have got up their case with great activity and great dexterity; but, Gentlemen, when I come to treat of their evidence, I shall show you many instances in which they have tried to impose upon you; and according to the common course pursued by Juries, when they find there has been one attempt made to impose upon them, and that attempt has failed, they will criticise the defence that is set up, and from that one they will learn the character of all.

My Learned Friend laboured for nearly an hour to show that this was not the subject of a patent, because the elastic strands were known before, and because non-elastic were known before—two materials, cotton and india-rubber, and because each have been used separately, that therefore no patent can be taken for a combination of those two articles. That is a proposition which would have made some of the old lawyers turn in their graves if they heard it, because, contrary to the opinions which have prevailed in Westminster Hall for 150 years, you may take a patent for the application of a principle,—you may take a patent for a new substance,—you may take a patent for a new combination of old materials. There must be some thought,—there must be some intellectual merit, there must be something in the nature of invention and discovery; but when it is made, people are astonished it has not been sooner thought of. My Friend, if his argument were allowed to prevail, would invalidate the most valuable patents that have been taken for the last half century. He would say Watt's steam-engine, with regard to the condensing, as a patent, was of no value, because water was known before, and iron was also known before. He might also say Bramah's patent for the hydraulic press was of no value, because the principle of the hydrostatic paradox had been known for a thousand years; but I say it was a new and ingenious application of that principle, and therefore a good patent. It might be said that a patent (if it had been taken) for Sir Humphrey Davy's safety lamp would be of no value, because wire had been known before, and the materials of which it was made were known. In the same manner, gentlemen, Keane et al.

you have elastic india-rubber known, and nonelastic cotton known, but if you, by a new combination, can make a new manufacture, that is the legitimate object of a patent; there is nothing new in the mechanical powers, but by a new combination of those, if you discover any thing which is beneficial to mankind, for that you are entitled to a patent. My Learned Friend's witnesses attempted to attack the utility of the invention, and they said, that those articles which were attempted to be manufactured in 1832, were inferior, that the experiments failed, and therefore they abandoned them; not one of them ventured to say that ours was inferior to Nos. 1 and 2, and if it were not superior, why did they buy it? If Nos. 1 and 2 are better than No. 3, for God's sake let them stick to Nos. 1 and 2, and I am glad of it, for then your verdict will do them no harm. What are we here for? They have adopted No. 3, this is the best evidence that can be given of the utility, they give judgment against themselves, and their witnesses, although they had made experiments and failed, they thought that Nos. 1 and 2 were superior. Gentlemen, that is the inconsistency to which men are driven when they attempt to do what is wrong; they give evidence against themselves by the very act of piracy. Then the defence is, that this was perfectly well known to the public before the patent, that the defendants themselves had manufactured and sold the article before January 1833. I must say, that a more improbable story I never heard; but they discontinued it as useless; yet, when the patent was taken, and the article introduced to the market, it took like wildfire; they were driven out of the market by its superiority, and being aware of that, they abstained from the making of it during the period of one year and nine months. With submission to his Lordship's direction, I will venture to state my view of the law on the subject. If this were publicly known and practised before the date of the patent, my patent is invalid. Gentlemen, it must have been publicly known and in use; a mere experiment is of no avail. If there had been experiments, and had failed and thrown aside, they would not invalidate this patent. The statute of James I., upon which all these patents are founded, is thus expressed: that the manufacture shall be such, that "others at the time of making such letters patents and grants, shall

Cornish et al. v.

not use;" and it is necessary to keep in mind this statute, and I will call to his Lordship's attention some of the late decisions in these matters. In the case of *Lewis and another* v. *Marling,** for shearing cloth, it was proved that a similar machine had been used twenty years before in New York, that a specification was sent over in 1811, to one Thompson, residing at Leeds, to manufacture a machine from it, who employed two engineers to do so, it was never finished but destroyed by the Luddites; the specification was shown to many persons. In 1816, a model of the machine was brought over from America, by one Smith, and shown to three or four persons in his manufactory. It appeared also, and bear this in mind, that ten years before, one Coxon, had made a machine to shear cloth from list to list; it was tried by a person called by the defendant, but he did not think it answered, and soon discontinued the use. *Lord Tenterden* observed at the trial, if the invention of shearing from list to list by a rotatory cutter, had not been generally used or known in this country, the patentee might be considered the inventor, within the meaning of the statute of James the First. His Lordship left to the Jury the question (which, with submission will be the question *Lord Chief Justice Tindal* will leave to you); whether it had been generally known, and whether the patent had been infringed. The Jury found for the plaintiff. Application was made for a new trial, on the grounds of misdirection of the Judge. Now *Lord Tenterden* was a strict Judge in respect to patents; but his Lordship said, I left it to the Jury to say whether it had been in public use before the granting of the patent; they found that it had not. His Lordship therefore supported the verdict. *Mr. Justice Bailey,* agreeing with *Lord Tenterden,* said,—It is no objection to my claim to a patent, that another also has made the discovery, provided I first introduce it into public use. *Mr. Justice Parke* said,—There is no case in which a patentee has been deprived of the benefit of his invention because another had invented it, unless he had brought it into use. And, Gentlemen, the verdict of the Jury in favour of that patent was confirmed, and remains a valuable patent. There was also the case of *Jones* v. *Pearce,*† tried by *Mr. Justice Patteson.* The invention was for a wheel, in which the weight was

---

* Vol. I., p. 475.

† *Ibid.*, p. 524.

Keene et al.

suspended on the circumference of the wheel, instead of its being borne by the nave. It was proved most distinctly that wheels on the same principle had been made and repeatedly used between Belper and Derby on the public roads, but it was given up, as it did not answer; Mr. Strutt having made a wheel-barrow, a strong cart, and a small cart on that principle. In consequence of Mr. Strutt's death the invention was not proceeded with; this was some years before the patent of Jones. There was not any evidence that Jones had ever heard of or seen the wheels made by Mr. Strutt. *Mr. Justice Patteson* said,—If on the whole it appears that this wheel constructed by Mr. Strutt, in 1814, was a wheel on the same principle, and substantially the same wheel, and that it was used openly in public, so that everybody might see it, and had continued to use the same up to the taking of this patent, undoubtedly then the patent is bad; but if you are of opinion that Mr. Strutt's was an experiment, and that it did not answer, and was abandoned, the plaintiff's patent which came after, is good."

Therefore, Gentlemen, according to the doctrine of these two cases, and according to common sense, an experiment made by persons who have been attempting to make a discovery but have not succeeded, will not vitiate a patent which is afterwards taken. Now bearing these in mind, let us address ourselves to the evidence that has been given, which, I say, is full of suspicion, and shows a powerful combination against this patent. The more cases of previous use the defendants attempt to prove, the more improbable their story is; for I have proved, and fully established, that the invention took like wildfire in the market: its merits only required to be explained to be understood.

Mr. Attorney-General then contrasted the evidence of the defence, and the discrepancies of the various parties at considerable length, and stated that all had an interest in destroying the patent. The Learned Gentleman continued:—

Gentlemen, I hope you will be of opinion that our case has received no answer, and that we are entitled to your verdict, that the defendants may be permitted to make braces of No. 1; and as they say there is no improvement in No. 3, no injury will be done to them. If there be an improvement in No. 3, then they ought not to participate in the benefit of that improvement, for it is protected by

Cornish et al. v.

our patent. If you consider no answer has been given, you will come to the conclusion that the plaintiffs are entitled to your verdict, and thus Cornish and Sievier will receive the reward which is due to them for the ingenuity and skill exhibited in making this discovery.

The Lord Chief Justice.—Gentlemen, this is an action which is brought for the infringement of a patent, which bears date the 17th of January, 1833, and which appears to have been a patent, as expressed upon the face of it, for an improvement or improvements in the making or manufacturing of elastic goods or fabrics, applicable to various useful purposes. That is the title of the patent, and it must be substantially made out, of course, by the evidence, that such invention has been made and given to the public before the plaintiffs can succeed. However, the defendants have put upon the record, and have raised various issues, which you are to decide between them, and I mention them to you in order that we may at once get rid of those that are in a manner of less consequence to the invention in the present instance, and which will require very little consideration, so that your attention may be limited strictly and entirely to the points that are really in dispute between the parties on the present occasion.

In the first place, the defendants have said that they are not guilty of an infringement of the patent with which they are charged. That is, they have neither sold from their own stock any of those articles, the exclusive making of which was intended to, granted and confined to, the plaintiff Sievier. Then they go on to say, that at the time of granting this patent, Mr. Sievier was not the first inventor of it; that raises another question for your determination. Then they go on to say, that the invention or discovery itself, at the time when the patent was granted, was not a new invention as to the public use and exercise thereof in England, which, I must tell you beforehand, will be the principal question you will have to try; and further to say, that it was not an improvement in the making or manufacturing of elastic goods or fabrics, applicable to useful purposes. That again is another question upon which evidence has been given on both sides, and which you must determine. And they lastly say, there was no sufficient specification, that is, that the party has not by a proper and apt description so stated the discovery upon the specification, which is enrolled in Chancery, that the public afterwards, when the time of the

Keene et al.

patent is expired, may reap the benefit of the discovery, by being able to manufacture the articles by themselves.

Now, with respect to the first question, whether he has or has not infringed the patent, supposing it to be a good patent, that depends upon the evidence of several of the witnesses, and who stated that they had purchased in the month of October, 1834, from the defendant Keene's warehouse, several articles which resembled No. 3.

Mr. Cresswell.—I will not ask your Lordship to put that question to the Jury.

The Lord Chief Justice.—I think upon the last also, which is the specification, very little question arises, because not only persons of skill and science read it, and say that it is intelligible to them to make the manufacture from, but also two or three witnesses were called who actually made it without any instruction but the specification. No person was called, who, upon reading the specification, stated he could not understand it, or had been misled by it, or incurred expense in endeavouring to copy or to imitate it, or stated that he was unable to ascertain what was meant by it. Men of science can understand it when read, and you yourselves can tell whether you understand it; and persons have been found in the humble walks of life, who have been able to make the fabric, without any other direction than that of the specification. Therefore, that will be a question not of very serious consideration when brought to your minds.

The next remaining question which I shall call your attention to is, whether this was or was not an improvement upon any manufacture of any fabric of the same kind, that was in general use. Upon that there is certainly contradictory evidence. You, however, will have to say (for that is a question made between the parties) whether that which is called No. 3, according to the specimens which have been exhibited to us, is or is not an improvement for the various purposes for which this patent was intended, over the manufactures which were known in the trade, namely, Nos. 1 and 2. I allude to them by the names Nos. 1, 2, 3, because we have had those terms so extremely familiar to our minds for the last three days, that it is a compendious mode of describing the fabric, and perhaps it brings it as clearly to your understanding as if I were to go through the more formal explanation of that which 1, 2, and 3, denote. Now, was this No. 3,

Cornish et al. v.

which varies in its mode of attaining its object from either No. 1, which was entirely composed of elastic material, or from No. 2, which contains the elastic material in a kind of sheath or case, was this an improvement upon that No. 2, for the various purposes for which the patent was taken out? Because the plaintiff Sievier undoubtedly having taken out this patent for different objects, it is incumbent upon him to show that the various objects for which he took out his patent and discovery, are such as will improve the manufacture of the article in their various particulars; and for that purpose we must look at what his object was, and then briefly refer to the evidence of which you are to be the judges. The specification which he has put in, after stating what his intention was in the terms to which I have referred, says he has three different objects in view in obtaining this patent, and he gives you an account of this first object which he proposes, which is to manufacture an article by the ordinary knitting frame, or similar kind of machinery, in which cords or strands of india-rubber shall be introduced between the loops or stitches of the fabric, for the purpose of forming elastic cords or bands round the margins or other parts of stockings, socks, gloves, night-caps, drawers, and various other articles of clothing. That is one of his objects. Another is to manufacture with the ordinary loom an elastic woollen cloth by introducing the india-rubber, so as to make it elastic either latitudinally or longitudinally, and to have a felt such as will nap, if that is necessary; that is the second object. The third object, which I believe is the principal one which is contested between the parties—the other two, although mentioned as very necessary to be proved to be useful, not being that for which the great value of the patent is probably esteemed—is this. He says the third object is to produce cloth from cotton, flax, or other suitable material, not capable of felting, in which shall be interwoven elastic cords or strands of india-rubber, coated or wound round with a filamentous material.

Now, with regard to the two first objects, but little evidence has been given; there has been some evidence, and that but little, and I am not aware that as to the two first there is any contradictory evidence brought on the part of the defendants: in fact, although it is necessary to leave this to you, it is impossible not to see that the

Keene et al.

great battle between these parties has turned upon the third object, that is, making the webs for braces, which are applicable to so many purposes in life; the other two are smaller, both in the estimation of the patentee and the public. The first, however, you observe by the cotton articles which were brought into Court—the night-cap, gloves, and other articles,—is the interknitting this braided material, so as to form a part of the fabric, and at the same time to give the parts that require it a degree of tension that is necessary and useful to the purpose. Is or is not that a useful discovery after the other? The persons who were called, stated that in their opinion they thought it was. I am not aware, but if you wish to have your attention called to it I will refer to the evidence, but I am not aware that there was any evidence specifically denying the utility of that on the side of the defendants. The next is, the object of making a woollen cloth which shall have the texture either latitudinally or longitudinally extensible, according to the degree of force that is applied to it. Now, it certainly does not appear, as I have stated, that that was an important part of the patent to the patentees, at least they never have brought it (as far as we have evidence) into a considerable degree of use. And I am not aware of any more evidence being given of the making of cloth than the two specimens which were exhibited to you in Court; they were handed up to you, they were placed each way as you must have seen, and seemed to answer the description, and the witnesses who produced them said, they thought it would be extremely useful, that it would make coats for common people in the ordinary class of life, that it would yield to the pressure applied to it, and would last out many others. I am not aware on this head also that any great, or indeed any evidence, was brought to contradict that evidence, as to the utility of this part of the invention; in fact, it seems to me as if by a kind of consent, though I am not able to put it to you in that way, that the contest, whether this patent was valid or not, was reserved for the third and greater object, namely, the making the elastic web for braces, garters, and other articles of that sort. You are bound, however, to say whether, with respect to one and all, the defendants or plaintiffs have succeeded on that plea, namely, whether the various objects are useful improvements upon the state of the manufacture

Cornish et al v.

as it was then practised. We come, therefore, to the third point, that is, the making these webs; which, where he comes to state more fully his mode of doing it, he states that the manufacture of elastic cloth, as he calls it (perhaps the word "web" would have been more familiar to a common comprehension), but the word "cloth" will cover it, it may be made of flax, though it more commonly applied to that which is made of wool: he says, "In manufacturing an elastic cloth from cotton, flax, or other material, which is not intended to be milled or fulled, I introduce into the fabric threads or strands of india-rubber, which have been previously covered by winding filaments tightly round them through the agency of an ordinary covering machine, or otherwise; these strands of india-rubber being applied as warp or weft, or as both, according to the direction of the elasticity required. By thus combining the strands of india-rubber with yarns of cotton, flax, or other non-elastic material, I am enabled to produce a cloth which shall afford any required degree of elastic pressure, according to the proportions of the elastic or non-elastic material." It was with reference particularly to this, the third object, that I stated the evidence on each side was contradictory, and that you must draw the balance between the parties. On the part of the plaintiffs, several of the witnesses, particularly Mr. Farey and Dr. Ure, stated the web and cloth, which was so made, was an improvement upon that which had preceded it; that it is lighter, more porous, and that it will yield more than the other—that it will adapt itself to the human frame more easily than the former—and that it is much cheaper. Now, I believe all sides agree upon this, that it is considerably cheaper, and indeed it stands to reason that that which is designated No. 3, would be much cheaper than No. 1, which is entirely made of longitudinal threads of india-rubber, because the cotton that is combined with it in No. 3, is a much cheaper article to make the same quantity of fabric than the other. That is the account they give—that it is lighter, more porous, and in cases, they say, where pressure is required, it is admirable in its consequences, for without compressing the parts within it, it gives all that proper degree of pressure which may be required for the purposes for which it is used. And two gentlemen are called of the medical profession, Mr. Skey and Mr. Holt, and they tell you that they think

Keene et al.

it is a very great improvement for use in surgical cases where bandages are required; that it is vastly superior to No. 1—in which it is entirely composed of india-rubber —not only as being more light, but also as being more porous, so as to allow of the possibility of perspiration passing from the patient—a matter of very considerable consequence. It is a circumstance in the case that it is found useful for surgical purposes. The patent, however, is not taken out for that purpose, and it would not be sufficient in order to maintain the patent, on the ground of its being an improvement, to show that it was an improvement in surgical cases for bandages only, because the patent is not only confined to that, but they must prove also that it is generally an improvement with respect to the general uses of that fabric or manufacture which was intended—that is, with respect to braces, garters, and other articles that are made of it. The evidence on the part of the plaintiffs states that it is cheaper, and cheapness is an improvement, and not to be laid aside and thought nothing of, and you are to consider it among other things; but that is not the only thing to be considered, because they may have a thing too cheap to be useful, and you must see whether it combines with it the other property of utility, which the former fabric when used for the same purpose possessed. The gentlemen who are called for the plaintiffs state that it does; several of the witnesses on the part of the defendants (I don't say all) speak very lightly of it. One of them, the first who was called, states that he thought it a production calculated to bring No. 1 into contempt; he had at one time made it, but had soon relinquished it, and had gone back to No. 1, which is made entirely of the extensible material (the india-rubber); and so several of the others stated. One stated, that he thought it was not so good, "because," says the man, "though it is cheaper it is heavier." "I found it," says the first witness, "not an improvement, but quite the reverse, and calculated to bring the thing into contempt, and so I gave it up, and I afterwards continued the old principle, making it all elastic." The plaintiff's second witness says, "it has an advantage over Nos. 1 and 2, that is, much cheaper; it is not a better article than No. 1, it is not so good—not so good for braces only." Then he goes on to say, "that No. 3 has almost superseded No. 1, and we sell more of

Cornish et al v

No. 3." Gentlemen, the evidence being of this nature, you are at liberty to consult your own judgment of the thing, the article having been exhibited before you. You will apply your own good sense and experience to them, and say which of these two sets of witnesses are speaking that which you must rely upon; and it is an observation not to be lost sight of, that the No. 3 article is one which, according to the testimony of this witness, as well as another, has had an extensive sale, and by having had an extensive sale, we are at liberty to ask ourselves how it obtained that; and although certainly the circumstance of its being considerably cheaper would go a great way to account for that, it would not go the whole way. Therefore, you must ask yourselves, whether in making braces, garters, and other articles, for which this web was originally intended, and before the improvement was applied by the public, this has made an improvement upon it before the patent was applied, and is more beneficial and useful to the public than the other was. That is one of the questions which you will have to determine.

We are now approaching nearer the real question in contest between these parties, that is, whether it is a new discovery, of which the present patentee, Mr. Sievier, was the first inventor, or whether it was known and practised in England before, and at the time of obtaining the patent in question. That question upon this record is resolved into two—they have said, that the manufacture itself is not in the language of the plea a new invention, as to the public use and exercise thereof in England—they go on to say, that Mr. Sievier is not the true and first inventor thereof; I don't know whether in this particular case, the second question will become very material upon the facts of the case, if you dispose of the first, because if the defendants establish for instance their case, that it was something known and practised in England generally at the time of the patent, why it is useless to inquire any further, whether the matter occurred to Sievier, whether he was the first inventor or not, because the answer would be, Why did he not take out his patent sooner, so as to secure the right to himself? on the other hand, if you decide it was a new discovery, and therefore that the patent is a good one, that is, that it was not known and practised in the kingdom at the time the patent was granted, then, in this particular case, there is nothing to

Keene et al.

deprive Mr. Sievier of the merits of being the inventor of this improved manufacture—there is no particular evidence that points to him as having borrowed it from anybody else, or from the public sources to which the public has the right of access. Sometimes it is a material question to determine, whether the party who got the patent was the real and original inventor or not; because these patents are granted as a reward, not only for the benefit that is conferred upon the public by the discovery, but also to the ingenuity of the first inventor; and although it is proved that it is a new discovery so far as the world is concerned, yet if anybody is able to show that although that was new—that the party who got the patent was not the man whose ingenuity first discovered it, that he had borrowed it from A or B, or taken it from a book that was printed in England, and which was open to all the world—then, although the public had the benefit of it, it would become an important question whether he was the first and original inventor of it. The main question is, whether this No. 3, which is the principal subject of the patent, was or was not in use in England at the time of granting these letters patent. Was it or was it not, in the language of the Act of Parliament, such a manufacture (which has a very wide and extended meaning—you may call it almost invention), was it or was it not such an invention, at the time of making the letters patent, as was current in use. If this No. 3, calling it technically and compendiously by that title, was at the time these letters patent were granted in any degree of general use; if it was known at all to the world publicly and practised openly, so that any other person might have the means of acquiring the knowledge of it, as well as this person who obtained the patent,—then the letters patent are void; on the other hand, if it were not known and used at the time in England, then as far as this question is concerned the letters patent will stand. Now, it will be a question for you, Gentlemen, to say, whether upon the evidence which you have heard you are satisfied that the invention was or was not in use and operation, public use and operation, at the time the letters patent were granted? It is obvious that there are certain limits to that question; the bringing it within that precise description which I have just given, must depend upon the particular facts that are brought before a Jury. A man may make experiments in his own

The question as to the time & first inventor some-times material.

The question is whet the invention is know & in use at the time of the patent.

Public user & novelty question for the jury

Cornish et al. v.

Definition
Distinction between
experiment &
"public use."

closet for the purpose of improving any art or manufacture in public use; if he makes these experiments and never communicates them to the world, and lays them by as forgotten things, another person, who has made the same experiments, or has gone a little further, or is satisfied with the experiments, may take out a patent, and protect himself in the privilege of the sole making of the article for fourteen years; and it will be no answer to him to say that another person before him made the same experiments, and therefore that he was not the first discoverer of it—because there may be many discoverers starting at the same time, many rivals that may be running on the same road at the same time, and the first which comes to the Crown and takes out a patent, it not being generally known to the public, is the man who has a right to clothe himself with the authority of the patent, and enjoy its benefits. That would be an extreme case on one side; but if the evidence that is brought in any case, when properly considered, classes itself under the description of experiment only, and unsuccessful experiment, that would be no answer to the validity of the patent. On the other hand, the use of an article may be so general as to be almost universal. In a case like that, you can hardly suppose that any one would incur the expense and trouble of taking out a patent. That would be a case where all mankind would say, "You have no right to step in and take that which is in almost universal use, for that is, in fact, to create a monopoly to yourself in this article, without either giving the benefit to the world of the new discovery, or the personal right to the value of the patent, to which you would be entitled from your ingenuity, and from your application." Therefore, it must be between those two (if I may so call it) limits that cases will range themselves in evidence, and it must be for a Jury to say, whether, supposing those points to be out of the question, in any particular case, evidence which has been brought before them convinces them to their understandings that the subject of the patent was in public use and operation at that time—at the time when the patent itself was granted by the Crown? If it was in public use and operation, then the patent is a void patent, and amounts to a monopoly; if it was not, the patent stands good. Now, Gentlemen, you will have to apply your understanding to-day to the evidence in this case, which is in

Keene et al.

many parts contradictory, in order to see whether you bring the case within the one or the other of these two descriptions, and whether this patent is or not a new invention. On the part of the plaintiffs in this case (referring as I do, and all my other observations have been made simply on this part of the case), the evidence is, as it necessarily must be, of a negative character; the assertion of the plaintiff Sievier is, "at the time I took out my patent, No. 3, the subject of the patent was not generally known, it was a new invention by me, and was not known to the world." You cannot prove a negative strictly—you can only do so by exhausting the affirmative instances of it, by calling persons who have never heard of it or seen it, and the more those persons are in the way of hearing of it or seeing it, if it had existed, the stronger is that exhausting evidence, if I may so call it, in its effect and value with the Jury. From the nature of the case, it is very difficult to suppose such circumstances as that a party should distinctly and affirmatively prove that it was a new invention, that it was not known and practised at the time the patent was obtained; therefore he calls several witnesses to prove that part of the proposition, namely, that there were persons who had been in this trade for several years. Mr. Rodgers tells you, there were but a few of the larger manufacturers of this article in London, and that previous to obtaining this patent, from the intercourse he had had with the trade, he thinks it likely if there had been such an article in the market, it would have been offered to him for sale, and none such was offered; the first he ever saw of it, I think, was in 1834; he became acquainted with No. 3, he says, in 1834, and first bought it in August; he became acquainted with it some three or four months before. Now, Minton, who is the agent of the plaintiff, states, that since April or May, 1833, he had supplied the trade with it, and he says, what he supplied them with was, the alternate web, and he saw nothing like No. 3, except that of the plaintiffs, until October, 1834, when No. 4, that is what is called the imitation by the defendants, was first sent out to the public. Then again, Hickling states pretty much to the same effect; he became acquainted with No. 3 in 1834, and had not seen or heard of it before that: Lindsey speaks to the fact, that before April, 1833, he never saw anything of the sort; and he gives you this fact, which

Cannot prove a negative in respect of alleged user.

Cornish et al. v.

you will have to consider and contrast with the evidence afterwards called, that he had lived as a servant of the defendants from October, 1832, to April, 1833, and then he went from the defendants to the plaintiffs; therefore he gives you something more than negative evidence, for he says, that while he was at the defendant's, No. 3 was made there. He undertakes to say that; therefore you will have to compare that evidence with the evidence of Walter Hall, and the other witnesses, upon whom so much observation was made. Lindsey is sure that was so, because there was only one loom at the defendants which could make it, and he took it with him when he went, and brought it away when he left the defendants' employ. That is the negative account, which is a *primâ facie* account, and sufficient to show there was no such article till the affirmative was proved. Now, the defendants, on the other side, have undertaken to convince you, that at the time when the patent was granted, the public were in possession of this—that it was an operation known and used; they undertook to show you, by affirmative evidence, that it was actually known and used, and that it was so known and used as that it is impossible to have any doubt upon the fact. They say, and show you, not only that various persons were making this before the time, and dealing with it as an article of trade, but that the defendants themselves say they had actually used it a year before very nearly, or a considerable time before the date of these letters patent. In order to establish this affirmative, they give you three distinct lines of evidence: first of all, they put in the specification of a former patent, which had been obtained by the plaintiff on the 1st of December, 1831, and they say that this specification, if you look at it, is in effect a declaration to all the world of this so-called new discovery, which is the subject of the patent of January, 1833. Undoubtedly, if you could show under the hand of the plaintiff, or anybody's hand, that the secret had been publicly communicated to the world which was intended to be covered by the subsequent patent, there is an end of that patent; if the world at large had been informed by this specification of the colour, fabric, and manufacture, which is intended to be effected by the subsequent patent, the subsequent patent must fall to the ground, otherwise a man would have nothing to do but to take out patent after patent

Keene et al.

when the former has nearly expired, and so afterwards procure to himself an unlimited privilege; therefore the question is, does it or not, when you look at it, carry with it the discovery or invention, as it is contended it does, of the new patent? When I first saw it I was considerably struck by the observation made by the Counsel at the bar for the defendants, but upon looking further at it, I was not prepared to tell you, nor would it be proper to tell you, because it is a matter of fact for your consideration, that this does embody in it a discovery of the subsequent patent. Reading it as a common man, I should rather think it applies to the case where the elastic material is combined at each end, and bound up in one mass or strand with non-elastic materials, and not where they each act separately and independently by themselves. If you by looking at this can find out the other, and can see that in this the other is contained, there is an end of the second patent—if not, we must pass it by, and go to the other evidence in the case.

The question as to [illegible] novelty notwithstanding the existence of a former invention is whether such former invention does or not carry the same substantial matter or thing.

The other evidence in the case is of two sorts,' that is, the other evidence is that which applies to the making of this fabric by other persons than the defendants, and then comes a body of evidence to show that it was actually made by the defendants so far back as June, 1832—between June and November, 1832. If either of those is proved—that is, that it was generally known and practised, and not merely as a matter of experiment and trial kept secret by the party, and thrown away as the result of that which was of no use to the public—the patent is gone; or if the defendants have shown that they practised it and produced the same result in their factory before the time the patent was obtained, they cannot be prevented by the subsequent patent from going on with that which they have done. But that is a mere question of fact, which you are to judge of; I am not to judge of it at all between the conflicting evidence which has been brought forward on both sides. Having now endeavoured as far as I am able to simplify the case by bringing your attention to the true point, I shall now proceed to read the evidence to you as far as you wish it, and you will then make up your minds upon it. You best know whether you have that recollection of it to make it necessary or not, but I shall have great satisfaction in doing it if you wish it to be done.

Public user a question for the jury.

Cornish et al. v.

The Foreman of the Jury intimated that the Jury had a full recollection of the evidence, and they merely wished to have their attention drawn to the particular points which had borne upon his Lordship's mind.

The Lord Chief Justice.—Then, Gentlemen, I certainly shall not take up your time unnecessarily by reading the evidence, but I will briefly conclude what I have to say, by calling your attention again to the several points which you have to determine. You must say, whether the defendants have infringed the patent at all; that, I suppose, there is no doubt about; and then you must say, whether there is a sufficient description and ascertainment of the nature of the invention, and of the manner in which it is to be performed; that is the question as to whether there is a specification or not. Then you must say, was it an improvement in the making or manufacturing of elastic goods or fabrics, applicable to useful purposes. Then come the remaining issues, one of which is, was the plaintiff Sievier, at the time of making the patent, the true and first inventor. Then comes the main question of all, which is, whether the invention and discovery at the time that the patent was granted, was a new invention as to the public use and exercise thereof in England; those are the very terms upon which the plea of the defendants is founded. I am not aware that by going more fully into it, I can make you better acquainted with the discovery than you must be already. I would only observe, that it must not be such a practice of it as is only referable to mere experiments for the purpose of making a discovery, or something secret, or confined to the party who was making it at the time, but that it must be, in order to set aside the patent, a case where it was in public use and operation among persons in that trade, and likely to know it. If you find that it was so, you will find a verdict for the defendants; if you are not satisfied with that, and think the case made by the defendants is not proved to your understandings, that there was a public use and exercise of the invention in England, why then you will find a verdict for the plaintiffs, with a shilling damages. The question is as to the right to the patent—no damages are sought.

"Public use" is not mere experiment for the purpose of making a discovery but [illegible] must be known in trade & to the parties who use the thing.

Verdict for the plaintiffs.

His Lordship gave *Sir F. Pollock* leave to move for a nonsuit on the question, whether the specification dis-

Keene et al.

closed any new manufacture, which would support the patent.

CORNISH & SIEVIER *v.* KEENE & ANOTHER.

In the Court of Common Pleas, before Lord Chief Justice Tindal, Mr. Justice Park, Mr. Justice Gaselee, and Mr. Justice Bosanquet.—Hilary Term, 1836.

Sir F. Pollock moved, on behalf of the defendants, for a nonsuit on the point reserved at the trial,—that the specification was not sufficient, and did not describe a manufacture sufficient to support a patent; and for a new trial on several grounds,—1st. That the verdict was against evidence; 2dly. That his Lordship at the trial misdirected the Jury; and, 3dly. That it had been discovered, since the trial, that the specification of a patent having a previous date to that of the plaintiffs', described a manufacture identical with that claimed by the plaintiffs.

The Lord Chief Justice.—There ought to be a rule *nisi* for a nonsuit on the points reserved, and for a new trial on the question of whether the verdict was not against evidence, and also on the point raised by the new evidence. I should prefer that the rule should also go with reference to the direction given by me, but my Learned Brothers think that there is no grounds for moving upon misdirections.

Rule *nisi* granted.

CORNISH & SIEVIER *v.* KEENE & ANOTHER.

In the Court of Common Pleas, before the Lord Chief Justice Tindal, Mr. Justice Gaselee, Mr. Justice Vaughan, and Mr. Justice Bosanquet.—Michaelmas Term, 1836.

The Attorney-General, with *Mr. Serjeant Wilde, Mr. Serjeant Stephens,* and *Mr. Hindmarch,* showed cause against the rule obtained in this case last term by *Sir F. Pollock,* and they contended, first, that taking the title of the invention given in the patent, together with the specification, there could be no reasonable doubt that this was a manufacture within the Statute, and that the Jury were correct in finding that the patent was for a new manufacture. The circumstance of all the warp of a fabric having been of india-rubber before the date of the patent, and other fabrics consisting of all

(a new combinati

Cornish et al. v.

a good subject-matter for a patent.

non-elastic warp threads also having been made largely before the date of the patent, would not prevent a person who first applied covered elastic threads combined with non-elastic in the same warp, so that the covered non-elastic part of the warps should control the elastic part of the warps, from having a valid patent for such manufacture. The Learned Gentlemen contended that the specification was perfectly clear, and workmen had had no difficulty in producing the manufacture from that document, without other aid. They further contended, that the objection raised to the specification could not now be made. The fifth issue only raised the question of whether a specification had been enrolled, not whether a sufficient specification had been enrolled. With respect to the evidence, that was a question wholly for the Jury; and there was no clear proof of any use before the date of the patent, beyond what resolved itself into experiment and abandoned experiment. In regard to Desgrand's specification,* the publication of that document after the granting

---

* The specification was as follows:—

"To all to whom these presents shall come, &c.—Now know ye, that in compliance with the said proviso, I, the said James Vincent Desgrand, do hereby declare that the said invention of a certain method of weaving elastic fabrics, consists in the weaving of such fabrics in any suitable looms of ordinary construction, with bare or uncovered strings or cords of caoutchouc or india-rubber, interwoven, if necessary, with any of the kinds of spun threads or yarns which are commonly used in weaving, whether composed of silk, cotton, flax, wool, or other fibrous materials; the said bare strings or cords of caoutchouc or india-rubber being in all cases used in the said method of weaving elastic fabrics, without applying any previous covering of silk or other thread around such strings or cords.

"The said bare strings or cords of caoutchouc or india-rubber being in some cases used to form the warp of the elastic fabric, spun threads or yarns of any suitable fibrous materials being used for the weft, or as part of the weft; or in other cases the said bare strings or cords of caoutchouc or india-rubber being used for or as part of the weft, the warp being composed of spun threads or yarns. Or in other cases such cords or strings of caoutchouc or india-rubber being used both for the warp or as part thereof, and also for the weft, or as part thereof. And the said weaving of bare or uncovered strings or cords of caoutchouc, either with or without combination with spun yarns or threads of any of the kinds usually woven in looms, may be performed in looms of the ordinary construction by the ordinary manipulations of weaving other fabrics, those manipulations being conducted with the aid of certain precautions which I will hereinafter point out. The elastic fabric produced by the said method of weaving bare or uncovered cords or strings of caoutchouc or india-rubber will possess more or less elasticity in one

Keene et al.

of the plaintiffs' patent, could not injure the validity of the grant any more than if the same description had

---

or both directions, according to the quantity and arrangement of the uncovered caoutchouc strings or cords that are interwoven into the said elastic fabrics; the aforesaid caoutchouc cords or strings are formed in the same manner as heretofore practised for producing such cords or strings, viz., by cutting caoutchouc or india-rubber into thin strips, and stretching them out in length and winding them upon bobbins or reels, where they are left for a sufficient time until they have entirely or in great part lost their natural elasticity.

"And as before stated, they may then be woven according to the aforesaid method, either alone to produce an entirely elastic fabric, or they may be combined in several ways with spun threads or yarns of other kinds of materials to produce partly elastic fabrics. By way of example I will state some of the kinds of elastic fabrics which may be woven according to the said method.

"For instance, I sometimes form the warp entirely of bare cords or strings of caoutchouc, or else it may be partly of such cords or strings and partly of spun yarns or threads of suitable material, and I introduce that warp into a loom of an ordinary construction, which is harnessed suitably for the texture of the fabric that I intend to weave; and I work the loom so as to cause the warp to be opened and separated by the harness in a proper order for all the bare cords or strings of caoutchouc in the warp, as well as the spun yarns or threads that may form a part of the warp, to be more or less covered and concealed by the threads of the weft; the latter being, in this case, composed of spun yarns, or threads of cotton, silk, worsted, or other like fibrous material. When the warp consists, as aforesaid, of strings or cords of bare caoutchouc with spun yarns of some other material intermingled, the spun threads or yarns of such material are wound on a separate yarn-beam from the beam whereon the cords or strings of caoutchouc are wound, and all the yarns, cords, or strings that are to form the warp, are brought from their several beams through the eyes of the proper heddles, with suitable arrangement to produce the kind of fabric desired, whether the same be dimity, or satin, or twilled stuff, or other of the fabrics woven usually in looms of known construction. Another kind of elastic fabric may be woven by the said method, by forming a portion of the warp of spun threads or yarns of cotton or silk, or other like filamentous material, wound on one or more yarn-beams, and another portion of the warp of cords or strings of bare caoutchouc wound on another beam. The said strings or cords of caoutchouc and spun yarns or threads being properly intermingled and brought together into one warp in the loom, and the loom being so harnessed and worked that in the woven fabric the caoutchouc cords or strings will be enclosed between two complete webs or woven fabrics, one above them and one below them, the shuttle being thrown sometimes above and sometimes below the caoutchouc cords or strings; and the order of the opening of the warp is such, that the spun threads of cotton, or silk, or other like material in the warp, or certain of the same, pass in and out from the upper web to the lower, that is, the same warp-thread will be found in the woven fabric to pass over one of the weft-threads of the upper web, then down between the bare cords or strings of caoutchouc of the warp, and under a weft thread of the lower web, and then up again, and so

Cornish et al.

appeared in a public journal. Even had Mr. Desgrand claimed it as part of his invention, the description coming

on. The bare cords or strings of caoutchouc are thus separated one from the other in the woven fabric, by the cotton or other kind of spun warp-threads interposed between them; and the upper and lower web are united, so that the woven fabric produced will be a double tissue, with strings or cords of bare caoutchouc included between the two tissues, and running in the direction of the warp; these two tissues being sufficiently united and tied together by the weft-threads to unite them as one, without confining the strings or cords of caoutchouc.

"Another kind of elastic fabric may be woven according to the said method by arranging in the loom one or more warps formed of cotton, silk, or other like spun yarns, and either using bare cords or strings of caoutchouc to form the entire weft, or else by using two or more shuttles, one containing bare cords or strings of caoutchouc, and the others containing cotton, or silk, or wool, or other like kinds of spun yarns. The loom being harnessed and worked in a proper manner to cause the threads of the warp to cover entirely the caoutchouc cords or strings of the weft. I sometimes use bare cords or strings of caoutchouc, both to form the warp and the weft, without any admixture of any spun yarns of cotton, silk, or other material. The fabric woven by this method will be very elastic in every direction, and may, after being woven, be rendered waterproof, as will be hereinafter described. By weaving with a double warp (in the way before mentioned as being used to produce a double stuff with cords or strings of bare caoutchouc enclosed within it), but without uniting the two webs, as there described, by all or some of the spun warp-threads of each web, passing in and out between the weft-threads of the other; and by harnessing the loom in the way usually practised for weaving tubular webs for bolting cloths or sacks without seams, I can produce elastic pipes or tubular webs without seams; and if they be woven entirely of bare cords or strings of caoutchouc, they may be rendered waterproof, by the means hereinafter described. That is to say, in order to render waterproof the elastic fabrics woven by the said method with bare cords or strings of caoutchouc, without the admixture of any spun yarns of cotton, silk, or other material, I dip them in boiling water, or sprinkle boiling water over them, and then I subject them to strong pressure. The effect of this process is to cause the several bare caoutchouc strings or cords of which the woven fabric is composed, to agglutinate together, and thus to make it very impenetrable to water. Note.—The cords or strings of bare caoutchouc being strained, as aforesaid, to their utmost tension before being used in the loom for the said method of weaving elastic fabrics so as to have lost in great part their natural elasticity, the fabric woven in the loom will possess but little of the intended elasticity immediately on quitting the loom; but it is afterwards rendered again elastic by the application of heat, that is to say, by ironing the said fabric with a heated iron, or passing it around or between heated cylinders. The heat thus applied causes the caoutchouc strings or cords to shorten. Hence, if they form the warp, the stuff will lose in length by such application of heat; if they form the weft, the stuff will lose in breadth; or, if they form part, or the whole, of both warp and weft, then the stuff will contract in both length and breadth. The amount of contraction of the stuff, in any of the kinds of weaving above described,

Keene et al.

out after the date of the plaintiffs' patent, would not have invalidated the second grant; it would have been neces-

should be ascertained at first by trial, before commencing to weave a large quantity of goods, and then according to the result observed, an allowance should be made in setting up the loom for the particular kind of stuff, and the particular kind and fineness of caoutchouc cord or string used therein; that is, if the caoutchouc cords or strings are in the warp and not in the weft, the beat up of the lay should be regulated so as to beat up the threads of the weft more or less close together, according to the contraction that will take place in the caoutchouc cords or strings of the warp; and *vice versa*, if the caoutchouc cords or strings are in the weft only, then the threads of the warp should be laid more or less close together in the loom, according to the degree of contraction that will take place in the caoutchouc cords or strings of the weft. It is obvious that no precise directions can be given on this head, but the fact being pointed out, it must be in the discretion of the weaver to set up and work his loom according to the quality of the bare caoutchouc cords or strings that he uses, and the peculiar arrangement that they may be intended to have in the stuff that he is going to weave. Note.—I have sometimes found it advisable, in order to give the caoutchouc cords or strings an equal degree of tension in the loom, instead of winding them on a yarn-beam, to wind each separately on a bobbin, all the bobbins being loaded with equal weights, that they may draw off with an equal tension in the weaving. Also to prevent the puckering, or rucks, or inequalities which might arise in the stuff, notwithstanding the precautions taken to strain the bare cords or strings of caoutchouc equally, I sometimes introduce at each selvage a cord or string of caoutchouc or india-rubber thicker than those contained in the stuff; and sometimes a wire (which I have found better), which wire is withdrawn as the work advances, but serves during the weaving to prevent the india-rubber cords or strings from being pressed more at one shoot of the weft than at another. And, note.—To cause the bare cords or strings of caoutchouc to pass smoothly and freely through the dents or splits of the reed, without getting shagged or roughened, which they are apt to do if no precaution be taken to prevent it, I apply to them in the loom when the warp is formed thereof, hogs' lard, or other like greasy material.

" It will be seen by the foregoing description, that the method of weaving elastic fabrics, described therein, is applicable to the weaving of elastic fabrics of any texture, usually woven in looms of the ordinary and known constructions; and it is obvious, that various patterns may be produced by varying the colours and arrangement of the spun yarns of cotton, silk, or other material used in weaving various fabrics.

" And the bare cords or strings of caoutchouc that form the warp or weft, or both, or a part of either, in the elastic fabrics woven in such looms, may be combined with yarns or threads of any other materials, with which the quality and degree of fineness obtainable in the bare cords or strings of caoutchouc may render them fit to be mingled and worked. On the character and extent of these combinations no precise directions can, from the nature of the subject, be given, but they must be left to the discretion of the weaver.

" And whereas cords or strings of caoutchouc have been heretofore used in various ways for composing elastic articles, as for instance, by

Cornish et al. v.

sary to show that Desgrand's patent had been granted for that invention, and that he had not improperly put the plaintiffs' invention into his specification.

Sir F. Pollock, with *Mr. Cresswell*, *Mr. Knowles*, and *Mr. Corrie*, in support of the defendants' rule, urged that it was for the plaintiffs to show clearly that the invention was new. It was proved at the trial that india-rubber had been introduced before into various fabrics, and uncovered elastic threads, combined with non-elastic threads in the same warp, had been largely used in making elastic fabrics; and the plaintiffs' witnesses had shown several such fabrics. Could a patent, then, be held for combining covered elastic threads with non-elastic threads in the same warp, even supposing that alteration in the manufacture was new, which was not the case, as was proved by several witnesses called by the defendants; and such previous working was not simply experimental, but making and selling the articles. The combination of two old things was not patentable,—

---

introducing such caoutchouc cords or strings in the said articles to act as springs, the same being contained in pipes or cases of leather, linen, or cotton, or other similar material, in the manner described in the specification of a patent granted to Thomas Hancock, on or about the 29th of April, 1820.

" And whereas such caoutchouc cords or strings covered by platting, winding, or otherwise with cotton, or silk, or other like filamentous material, have, or may have, been combined by laying them together, or platting, or interlacing, or netting them together, to form cables, ropes, lines, bags, and other like fabrics or articles, as described in the specification of a patent granted to Robert William Sievier, on or about the 1st day of December, 1831.

" And whereas also, such caoutchouc cords or strings so covered with cotton, or silk, or other like material, have, or may have, been woven in combination with cotton, or flax, or other similar yarns, to produce a fabric partially elastic; but bare cords or strings of caoutchouc have not been heretofore used in the warp or weft of a fabric woven in looms of any ordinary construction, and with the usual modes of harnessing such looms.

" Now I do hereby declare that I do not claim the use of cords or strings of caoutchouc when the same are so covered with silk, or cotton, or other like material, wound, platted, or otherwise laid around them; or when the same are used merely as springs, or in any other way than that I have described hereinbefore. I claim only the method, which I have described, of weaving elastic fabrics with uncovered or bare cords or strings of caoutchouc or india-rubber, in looms of any of the ordinary constructions; the said bare cords or strings of caoutchouc forming either the entire or any portion of the warp or of the weft, or of both the warp and the weft of such elastic fabrics.—In witness whereof, &c.

" *Enrolled May* 13, 1833." " JAMES VINCENT DESGRAND.

Keene et al.

Sanders v. *Aston.** The Learned Gentlemen called attention to the evidence, and urged that the verdict ought not to stand, and that the publication of Desgrand's specification must be taken as of the date of the patent, and not of the enrolment.

The Lord Chief Justice.—The discussion on this case arises on a motion to the Court to set aside the verdict obtained by the plaintiffs, as assignees of the original patentee, in an action for the infringement of a patent, and to grant a new trial upon three grounds;—first, That in point of law the invention for which the patent was taken out was not the subject-matter of a patent; secondly, That the verdict was against the evidence given at the trial; and, thirdly, Upon facts disclosed in an affidavit. The patent in question, which bore date the 17th of January, 1833, was "for an improvement or improvements in the making or manufacturing of elastic goods or fabrics, applicable to various useful purposes," and the patentee in his specification, which was enrolled in July, 1833, described his invention in general terms, to be designed for the production of an elastic web cloth, or other manufactured fabric, for bandages, and for such articles of dress as the same might be applicable to, and then described more particularly the three distinct objects which the patentee proposed. At the trial of the cause, it was admitted on the part of the defendants, that the principal ground on which the patent was sought to be impeached, was with reference to the third object described in the specification, and the whole of the evidence produced by the defendants, and the main part of the argument before us, applies itself to that object alone. The third object proposed by the patentee was, to produce cloth from cotton, flax, or other suitable material not capable of felting, in which shall be interwoven elastic cords or strands of india-rubber, coated or wound round with filamentous material. The patentee afterwards describes the mode of effecting the third object to be, by introducing into the fabric threads or strands of india-rubber, which have been previously covered by winding filaments tightly round them through the agency of an ordinary covering machine, or otherwise, these strands of india-rubber being applied as warp or weft, or as both, according to the direction of the elasticity required; that,

---

* Vol. i., p. 510.

Cornish et al. v

by thus combining the strands of india-rubber with yarns of cotton, flax, or other non-elastic material, the patentee was enabled to produce a cloth which should afford any degree of elastic pressure, according to the proportions of the elastic and non-elastic material. The patentee added, that the strands of india-rubber were, in the first instance, stretched to their utmost tension, and rendered non-elastic, as described in a former specification to another patent, and being in that state introduced in the fabric, they acquire their elasticity by the application of heat after the fabric is made. Now, the first objection made to the patent so described is, that the invention is not the subject-matter of a patent; that it is neither a new manufacture, nor an improvement of any old manufacture, but is merely the application of a known material in a known manner, to a purpose known before. The question, therefore, as to this point is, does it come under the description of "any manner of new manufacture?" which are the terms employed in the Statute of James. That it is a manufacture can admit of no doubt; it is a vendible article, produced by the art and hand of man, and of all the instances that would occur to the mind when inquiring into the meaning of the terms employed in the Statute, perhaps the very readiest would be that of some fabric or texture of cloth. Whether it is new or not, or whether it is an improvement of an old manufacture, was one of the questions for the Jury upon the evidence before them; but that it came within the description of a manufacture, and so far is an invention which may be protected by a patent, we feel no doubt whatever. The materials indeed are old, and have been used before; but the combination is alleged to be, and if the Jury are right in their finding is, new; and the result or production is equally so. The use of elastic threads or strands of india-rubber, previously covered by filaments wound round them, was known before; the use of yarns of cotton, or other non-elastic material, was also known before; but the placing them alternately side by side together as a warp, and combining them by the means of a weft when in extreme tension, and deprived of their elasticity, appears to be new; and the result, viz., a cloth in which the non-elastic threads form a limit, up to which the elastic threads may be stretched, but beyond which they cannot, and therefore cannot easily be broken, ap-

Definition of term manufacture in the statute.

Materials may be old but if combination new this is a good subject-matter.

Keene et al.

pears a production altogether new. It is a manufacture at once ingenious and simple. It is a web combining the two qualities of great elasticity and a limit thereto.

The second objection to the verdict is, that it is against the evidence. The only issue to which this objection has applied itself in the course of the argument, is the issue, whether the invention was new as to the public use thereof in England. Now, the evidence at the trial which applied itself to this question, consisted of two perfectly distinct heads or classes; the documentary evidence of former patents and specifications, and the parole testimony of the witnesses. It was urged that the present invention was, in the whole, or a material part of it, already known to the public, by the specification to the patent obtained by Hancock, which was enrolled in August, 1820, and the specification to the former patent enrolled by Sievier, in June, 1832. As to Hancock's patent, it is manifest that, if it applied at all to the invention for which the patent now under discussion was taken out, it applied only to the first object stated in the specification, all contention as to which object was given up at the trial. But the description in Hancock's patent shows a material distinction between his discovery and that of Sievier. Hancock's patent was taken out for a discovery "of the application of a certain material to certain articles of dress, by means of which the same may be rendered more elastic," and the mode by which this was effected is described in the specification, to be that "of applying strips of india-rubber into cases or pipes formed in the article after it was complete." The first object of Sievier's patent is that of introducing the cords or strands of india-rubber between the loops or stitches of the fabric, so as to form a constituent part of the fabric itself; and as to the former patent of Sievier, it was a patent taken out for the making of cables, ropes, whale fishing and other lines, lathe and rigging, bands, bags, and purses, of filaments or threads of india-rubber, covered with cotton or other materials; the bands and bags were to be knitted, not woven, and there was no attempt to mix with them any non-elastic material to strengthen them, or to form a limit to their elasticity, or for any other purpose. These patents, therefore, do not by any means, as it appears to us, impeach the novelty of the present invention. As to the evidence of the various

Cornish et al. v. Keene et al.

witnesses brought forward on each side at the trial, it must be admitted that there was evidence on both sides. The question raised for the Jury was this: whether the various instances brought forward by the defendants amounted to proof, that before or at the time of taking out the patent, the manufacture was in public use in England; or whether it fell short of that point, and proved only that experiments had been made in various quarters, and had been afterwards abandoned? This question is, from its nature, one of considerable delicacy; a slight alteration in the effect of the evidence will establish either the one proposition or the other, and the only proper mode of deciding it is by leaving it to the Jury. On the present occasion they heard the evidence patiently, and appeared to apply it with intelligence, and we can see no reason to be dissatisfied with the conclusion at which they arrived.

With respect to the third ground upon which the rule to show cause was obtained in this case, viz., that since the trial the defendants have discovered a patent taken out by one Desgrand, the patent being sealed in November, 1832,—without entering into the question, whether the invention for which the patent in dispute was taken out, was or was not described in the specification of Desgrand, we think it sufficient to observe, that this specification was not enrolled till May, 1833, whereas the article made under the plaintiffs' patent was publicly made and sold on the London market, to a very large extent, in March and April of the same year; and although the specification of Sievier's patent was not enrolled till July, 1833, we think the mere fact of the enrolment of Desgrand's specification after the plaintiff's patent was sealed, and his discovery known upon the market, does not of itself alone afford any proof whatever of the want of novelty in the manufacture made under the plaintiff's patent. We therefore think there is no ground for disturbing the verdict, and that the rule for a new trial must be discharged.

The mere fact of
enrolment of a Specn
after the ~~sealing of~~
a patent ~~is not~~ is sealed
& the ~~patentee's~~
invention ~~is~~ known
is not sufficient
to afford proof of
want of novelty in
such invention –

Rule discharged.

Abbott v. Williams et al.

ABBOTT *v.* WILLIAMS AND OTHERS.

In the Court of Chancery, before the Vice-Chancellor (Sir L. Shadwell).—April 4, 1837.

This was an application *ex parte* made by *Mr. Knight* to his Honour the Vice-Chancellor, to restrain the defendants, Stanbridge, Marshall, and Williams, from using the mode described in the specification of a patent granted to the defendant, Williams, on the 23d of May, 1829, for "Improvements in the making or manufacturing of felt, or a substance in the nature thereof, applicable to covering the bottoms of vessels, and other purposes,"* which

---

* The specification was as follows:—

"To all to whom these presents shall come, &c.—Now know ye that in compliance with the said proviso, I, the said Thomas Robinson Williams, do hereby declare that the nature of my said invention, and the manner in which the same is to be performed, is described and ascertained as follows (reference being had to the accompanying drawing, that is to say):—I pass the hair, wool, cotton, hemp, flax, or other fibrous substances, to be converted into felt, between two wire webs immersed in a composition of melted tar, pitch, or such other material as I propose to make use of, with reference to the nature of the proposed manufacture. This is subjected to pressure under rollers, and a substance is thus produced of such width and length as may be desired. The machine I have used for this purpose, I have described as follows:—

"Fig. 1, represents a section of the machine, and A, B, represents an endless web of woven wire extended upon and passing around the two rollers or drums, C, D. Upon this endless web is received the different materials of which I make the felt, or a substance in the nature thereof. These materials, whether hair, wool, cotton, hemp, flax, or other fibrous materials, are prepared by a carding-engine, blowing machine, devil, or any other means of disposing them evenly upon the web. E, F, represents another endless web of woven wire extended upon and passing around the two drums, G, H.

"Webs of any other material than wire sufficiently open would answer the purpose, but I consider the woven wire web preferable on account of its greater durability and firmness.

"I, J, represents a cistern or box which contains the mixture in which the materials are to be immersed. This cistern or box is heated, when required, either by a steam-pipe passing through and coiled within it, or by a fire immediately applied underneath, as may be found most convenient.

"K, L, are two metallic rollers mounted in bearings at each end. The upper one being pressed upon the lower by levers and weights, as represented at 1 and 2, or by any other common mechanical contrivance; these rollers receive any required motion by being connected with any convenient part of the preparatory machine.

Abbott v.

patent was assigned to the plaintiff on the 29th of May, in the same year. The deed of assignment contained a clause that the defendant, Williams, should not, in any manner, interfere with, or engage in, the manufacture of felt, and that any improvement that should suggest itself to him, should be the property of the plaintiff. On the 14th of February, 1833, the defendant, Williams, took out letters patent for "a new combination of fibrous

"It will now be readily seen that as both the endless webs of woven wire pass between the weighted rollers, K, L, whilst in motion, that they will be drawn forward, and consequently receive a rotatory motion, which will likewise be communicated to the four rollers or drums, C, D, G, H, and that when the different materials are properly spread upon the endless web, as seen at 3 and 4, they will move onwards until they are received between the two sheets of woven wire, as at 5 and 6, and thence onwards over the roller, 7, and descend into the liquid (the surface of which is shown by the dotted line, *a*, *b*), then under the roller, 8, after which it will pass up again out of the liquid between the metallic rollers, K, L, where all that may be superfluous is pressed out and falls again into the cistern, while the felt, or substance in the nature thereof, will still move onwards until it is liberated from between the two sheets of woven wire, as seen at No. 9, where, from the action of the rollers and liquid, it is sufficiently compressed and only remains to be deposited upon the table, M, N, where it is either cut into sheets or rolled up in any lengths which may be required.

"For the purpose of covering ships' bottoms and houses, a felt composed of hair, immersed in a composition of tar and rosin, or tar and pitch, is preferable; but by varying the material, and using hemp, flax, cotton, or wool, and by varying the composition or mixture through which the same is passed, and adding size or glue, whiting, clay, lime, and other substances, I produce a felt or a substance, in the nature thereof of greater firmness, adapted for the same uses as millboard, pasteboard, or floor-cloth, and for other purposes.

"I may also further add, that I sometimes make use of two separate sheets or pieces (instead of a continuous web), between which the hair or other substances are placed, and whilst so between them, they are immersed in the required liquid, and subjected to the pressure of rollers, as in the above described manner.

"In reference to the above description, I hereby declare, that I do not claim as my invention any novelty in the manner of spreading the materials in the way described, as I make use of either the common carding engine, blowing machine, devil, or any other method of doing it as evenly as possible.

"But I do claim as my invention the making use of two sheets or webs for this purpose, whether they be, as before mentioned, of woven, plaited, laid, or braided wire, or of other substances, or even perforated sheets of metallic or other substances, and the method of subjecting the different materials, whilst between them, to the action of the rollers, in such liquids as I wish to impregnate the different materials with.—In witness whereof, &c.

"THOMAS ROBINSON WILLIAMS."

Williams et al.

materials, forming, by means of machinery, artificial skins, which might be applied to the purposes for which leather, vellum, and parchment are now used." This patent came by purchase the property of the defendants, Stanbridge and Marshall, and who, in consideration of certain services to be performed by Williams, took him into partnership. It having been discovered that the defendants were making felt under this patent, applicable to the sheathing of ships, and other purposes, by similar means to those described in the patent assigned to the plaintiff, his Honour granted an injunction against the defendants generally for the infringement, and against Williams individually, under the deed of assignment of the 29th of May.

ABBOTT *v.* WILLIAMS AND OTHERS.

In the Court of Chancery, before the Vice-Chancellor (Sir L. Shadwell).—May 25, 1837.

THIS was an application on the part of the defendants to have the injunction, which had been granted against them, dissolved.

Mr. Wigram and *Mr. Bethell* appeared for the defendants, Messrs. Stanbridge and Marshall, and *Mr. Jacob* and *Mr. Godson* for the defendant, Mr. Williams; and the application was opposed by *Mr. Knight* and *Mr. Anderson* for the plaintiff. After the injunction was granted, it was agreed by the parties to the suit to appoint gentlemen on both sides to view the works of the plaintiff and the defendants, and to report thereon.

The following is the evidence given :—

Affidavit of *William Abbott*, of Bermondsey, felt-manufacturer, saith—that by an indenture bearing date the 29th of May, 1829, the defendant, Thomas Robinson Williams, assigned to him for certain considerations named in the deed, letters patent, dated 23d May, 1829, together with all improvements that he might at any time thereafter make, discover, or invent in machinery for the manufacture of felt, during the term of such letters patent. That on or about the 27th of February last, he received information that the defendants were carrying on the manufacture of an article, which they, the defendants, called "*Patent Sheathing*" for covering ships' bottoms,

Abbott

and other purposes, and which, in all material respects, resembled the felt, or a substance in the nature thereof, made under the patent assigned to the deponent. Having set on foot inquiries, he ascertained that his information was correct, and sent his foreman, William Crook, to the defendants' manufactory, to endeavour to obtain an inspection of the process used by the defendants, but he was not able to get admittance. Deponent, by the advice of his solicitor, employed one Thomas Peachey to purchase some of the sheathing, and on the 20th day of March, he bought ten yards, which, on a careful examination, was found to resemble in all material respects the felt manufactured under the deponent's patent.

Thomas Peachey, deposed that, on the 20th of March, he purchased of the defendants ten yards of felt for sheathing, part of which he handed to the plaintiff, and the remainder was then in his possession.

Affidavit of *William Abbott*, the younger.—Saith, that for seven years and upwards, deponent hath been engaged in partnership with his father, the plaintiff, in the manufacture of felt, or a substance in the nature thereof, made according to the invention of the defendant, Thomas Robinson Williams, for which he obtained letters patent in 1829, and which are now vested by assignment in said plaintiff, and that deponent is thereby well acquainted with the nature of the said invention, and the machinery and process used in the said manufacture, and the article produced thereby.

Previous to the said invention, felt, and substances of that nature, were made by working the fibrous materials together with the hand, and then immersing the same in some liquid composition or mixture, according to the species of felt required to be produced.

The process of manufacturing felt, or a substance in the nature thereof, according to said invention of 1829, consists in spreading the fibrous materials of an even thickness between two woven webs of wire, or other perforated substance, by means of a carding or blowing machine, and in that state immersing the same in the composition, or mixture, with which the felt is required to be impregnated, and then pressing the same between rollers; by which process a felt, or substance in the nature thereof, can be produced thinner, and of a close texture, and more equal thickness, than when made according to the

Williams et al

ordinary method by the hand; and can also, by means of the said invention, be made at a greatly reduced cost, and of any length, while, according to the ordinary method, felt, and substances of that nature, are only made in sheets or pieces, not exceeding a few feet in length. The degree of firmness and consistency to be given to the patent felt, or substance in the nature thereof, depends upon the nature of the composition or mixture, and of the fibrous materials, and of the degree of pressure made use of, and that by varying the composition or mixture, and adding size or glue, whiting, clay, lime, and other materials, a felt, or a substance in the nature thereof, of greater firmness, adapted for the same uses as millboard, pasteboard, or floor-cloth, and for other purposes, may be produced, as stated by said Thomas Robinson Williams in his specification of said invention of 1829. The patent felt, or substance in the nature thereof, is distinguishable from that made according to the ordinary method, not only by being thinner, and of a closer texture, and more even thickness, but that upon the application of turpentine or any chemical agent, by which the composition or mixture used in the manufacture can be dissolved, the fibrous materials of the patent felt, or substance in the nature thereof, easily separate and fall to pieces, while the fibrous materials of felt, and substances of that nature, made according to the ordinary method, from having been worked together by the hand, continue to adhere together, notwithstanding the composition or mixture used in the manufacture has been dissolved, and do not separate like the patent felt, or substance in the nature thereof. That deponent hath seen some felt, or substance in the nature thereof, lately purchased by Thomas Peachey, of Limehouse, painter, from the above-named defendants, at their manufactory in Lamb's-buildings, Bunhill-row, London, under the name of patent sheathing, and hath carefully examined a piece thereof; and that by applying turpentine thereto, this deponent hath dissolved the composition or mixture, with which the same has been impregnated. That such felt, or substance in the nature thereof, called patent sheathing, is made of refuse of hemp, or other similar material, instead of hair, which is generally used by said plaintiff in making the patent felt, or substance in the nature thereof, and is impregnated with a composition or mixture of a stronger and more tenacious nature than what is used by said

Abbott

plaintiff, and that in consequence thereof the same possesses more firmness and consistency than said patent felt, or substance in the nature thereof, and bears some resemblance to millboard or pasteboard, to the manufacture whereof, or of a substance in the nature thereof, said invention is applicable, as stated by said Thomas Robinson Williams in his said specification; but that as regards the texture and apparent method of manufacture of said felt, or substance in the nature thereof, called patent sheathing, and the purposes to which it is applicable, and more particularly the covering of the bottom of vessels, the same closely resembles said patent felt, or substance in the nature thereof, and can only have been produced, as deponent verily believes, by a process and machinery in all substantial respects resembling the process and machinery for which said letters patent were granted.

Affidavit of *William Crook*, Foreman to the plaintiff.—Saith, that he is well acquainted with the manufacture of patent felt, or a substance in the nature thereof, made according to the invention of the above-named defendant, Thomas Robinson Williams, for which he obtained letters patent in 1829, deponent having for seven years and upwards been in the employ of said plaintiff in carrying on said manufacture and attending to the machinery and process used therein.

He hath seen and examined a piece of felt or substance in the nature thereof, part of a larger quantity lately purchased by one Thomas Peachey, of the above-named defendants, under the firm of Stanbridge, Marshall, Williams, and Co., at their manufactory in Lamb's-building, Bunhill-row, London, by the name of patent sheathing, and that upon such examination deponent found the texture and combination of the materials in said felt, or substance in the nature thereof, called "patent sheathing," to be the same as in the said patent felt, or a substance in the nature thereof, made according to said invention; and that upon dissolving the composition or mixture used in making said felt, or substance in the nature thereof, called "patent sheathing," by applying turpentine thereto, the fibrous materials are found to possess the same degree of looseness, and to separate in the same manner as the fibrous materials of the plaintiff's patent felt, or substance in the nature thereof, upon the composition or mixture, used in making the same, being dissolved. That

Williams et al.

said felt, or substance in the nature thereof, called "patent sheathing," is applicable to the same purposes as said patent felt, or substance in the nature thereof, and particularly to the covering of ship's bottoms; and in deponent's judgment and opinion, and as he verily believes, must have been made by a process and machinery the same as those used by said plaintiff, according to the invention of said Thomas Robinson Williams. That since the beginning of the month of March last, deponent, by the directions of said plaintiff, has been several times to the manufactory of said defendants in Lamb's-buildings, Bunhill-row, to endeavour to inspect their process and machinery, but that deponent hath never been able to gain admittance thereto, the workmen employed there having always refused to allow deponent to see the same.

Affidavit of *George Cottam*, of Winsley-street, Oxford-street, in the county of Middlesex, Manufacturing Engineer, and *William Carpmael*, of Lincoln's-inn, in the county of Middlesex, Civil Engineer,—severally say; and first, George Cottam saith, that for twenty years and upwards he has been engaged in manufacturing steam-engines and machinery of various kinds, and hath devoted constant attention to the improvements from time to time made in the construction of machinery, and the application thereof to manufacturing purposes.

William Carpmael saith, that for the last twelve years, or thereabouts, he hath practised as a civil engineer, and hath been much employed in advising on inventions of new processes and machinery, and in assisting inventors in describing and specifying their inventions, and the means of carrying the same into effect.

That they have attentively examined the copy of a specification, bearing date the 8th of September, 1815, of an invention of one William Wood of "the manufacture of a material or materials, and the application thereof to the more effectually making water-tight and sea-worthy ships, and all other vessels;" also the copy of a specification, bearing date the 23d of May, 1829, of an invention of defendant, Thomas Robinson Williams, of "improvements in the making or manufacturing of felt, or a substance in the nature thereof, applicable to the covering the bottoms of vessels and other purposes;" also the copy of a specification bearing date the 10th of August, 1833,

Abbott

of an invention, or alleged invention, of the said defendant, Thomas Robinson Williams, of "a new combination of fibrous materials, forming by means of machinery artificial skins, which may be applied to the purposes for which skins, leather, vellum, and parchment are now used." And that they have viewed and carefully examined the machinery and process used by the plaintiff as assignee of said patent of May, 1829, at his factory in Bermondsey-street, in the borough of Southwark, and the machinery and process used by defendants at their factory in Lamb's-buildings, Bunhill-row, London, and that deponents have seen such machinery respectively at work, and have compared and examined the respective fabrics produced thereby.

That previous to the invention of said Thomas Robinson Williams, for which said patent of May, 1829, was granted, the ordinary, and as they believe, the only known method of manufacturing felt, and substances of that nature, was by working the fibrous materials together, so as to make the fibres intertwist, interlock, and mat, thus producing a fabric by the fibres combining together, as is well understood and extensively practised by hat manufacturers to produce hat bodies, and when felt was required to be impregnated with any liquid composition, in order to be applied in covering the bottoms of ships, sheets of felt were immersed in the liquid by the hand, and then pressed and compressed between rollers, which is the method described in the specification of the invention, for which said patent of March, 1815, was granted to said William Wood.

That the novelty and value of the invention of said Thomas Robinson Williams, of 1829, consisted in the discovery of a method of saturating with adhesive mixture, a layer of loose fibrous materials, and condensing the same into a continuous length of felt, or substance in the nature thereof, in one operation, by means of machinery, without the fibrous materials having been previously worked or felted together, according to the ordinary method then and still in use. And that by such invention a felt or substance in the nature thereof was produced, equally well adapted as the hand-made felt to the covering of ships' bottoms, the roofing of buildings, and other purposes, and possessing the important advantages of being made at a greatly reduced cost, and in almost any quan-

Williams et al.

tity, owing to the saving of manual labour and the facility of production obtained by machinery.

That the method, used by plaintiff, of making felt, or a substance in the nature thereof, consists in producing an even layer or deposit of the loose fibres of hair, wool, cotton, hemp, flax, or other fibrous materials, on an endless and moving web of woven wire, or wire cloth, by means of a blowing, or other such-like machine, by which the fibres are carried forward and deposited evenly on the wire-cloth, or web, by currents of air being forced through the wire-cloth, and the even layer, thus constantly being obtained, is carried forward, and meets with a second endless and moving web of woven wire, or wire-cloth, placed above that on which the fibrous materials are spread, and in this state the layer of fibrous materials is passed into the adhesive fluid contained in a trough, and from thence is carried on and passed between two pressing-rollers, one of which, viz., the upper roller, is placed above the surface of the adhesive fluid, and the other, or under roller, is partly immersed in the adhesive fluid, the result of which process is that the layer of loose fibrous materials by being thus saturated with the fluid, and passed between the pressing rollers, becomes condensed into a fabric resembling felt, or a substance in the nature thereof.

That the methods used by the defendants of making the article they call patent sheathing, and other similar fabrics, consists in producing an even layer or deposit of refuse hemp or flax, or other fibrous materials, on a revolving cylinder of woven wire or wire-cloth, by causing a current of air to pass through the meshes of the wire-cloth, by creating a partial exhaustion of the air below the wire-cloth, by means of a blowing-machine; and the even layer thus constantly being obtained, is drawn off the wire-cloth cylinder, by a pair of grooved rollers, which press the fibrous materials together, and the layer of fibrous materials is then carried on, and passed between two pressing rollers, one of which, namely, the upper roller, has a trough applied to its surface, containing the adhesive fluid, which is from thence applied to the upper surface of the layer of fibrous materials, and the other, or under roller, is partly immersed in another trough, containing the adhesive fluid, which is thus applied to the under surface of the layer of fibrous materials, the result

Abbott

of which process is, that the layer of loose fibrous materials being thus saturated with the fluid, and passed between the pressing-rollers, becomes condensed into a fabric resembling felt, or a substance in the nature thereof, which the defendants call "Patent sheathing, or artificial skins," but which, (supposing the plaintiff's machinery, and the defendants' machinery, to be working with the same fibrous materials, and the same adhesive fluid,) is a fabric identical with that produced by the plaintiff's process and machinery, and that in their respective judgment and opinion, the method so used by the defendants of making their said article called patent sheathing, and other similar fabrics, is a clear infringement of the invention for which the said patent of May, 1829, was granted, and of the plaintiff's rights under the same, and that the process and machinery of the defendants are only colourably, and not substantially different from those of plaintiff's.

That a main and distinctive feature of the invention for which the patent of 1829 was granted, consisted in converting a layer of loose fibres into a fabric or substance, by adhesive materials and pressure between rollers, which as they verily believe was then an entirely new invention.

That defendants by using two troughs, instead of one, as hereinbefore described, and thereby avoiding the necessity of passing the layer of loose fibrous materials through the adhesive fluid, are enabled to effect their process with the use of only one revolving cylinder of wire-cloth, and to dispense with so much of the invention for which the said patent of May, 1829, was granted, as is claimed in the specification under the words, "the making use of two sheets or webs for this purpose, whether they be, as before mentioned, of woven, plaited, laid or braided wire, or of other substances, or even perforated sheets of metallic, or other substances;" but the defendants use so much of said invention as relates to the method of pressing a continuous layer of loose fibrous materials, saturated with adhesive fluid, into a fabric, resembling felt, or a substance in the nature thereof, and which is claimed in the same specification, under the words, "and the method of subjecting the different materials (whilst between them) to the action of the rollers, in such liquids as I wish to impregnate the different

Williams et al.

materials with;" which method of making a fabric resembling felt, or a substance in the nature thereof, whether separately from, or combined with, the use of two sheets or webs of wire-cloth, was, to the best of their respective knowledge and belief, a new invention, when the said patent of May, 1829, was granted.

That the piece of felt, or a substance in the nature thereof, now produced, and shown to them, manufactured by plaintiff's machine, is identically the same as that made by defendants, and that they differ only in the materials used in making them, the plaintiff's felt, or substance in the nature thereof, being made of hair, and the defendant's patent sheathing being made of refuse hemp and flax, and there being some difference in the liquid composition with which they are impregnated.

That at the request of the plaintiff they attended at his factory on the 16th of May last, and examined the working of his machinery, according to said patent of May, 1829, while manufacturing felt, or a substance in the nature thereof, from refuse hemp and flax, the machinery being in all respects the same as when employed in manufacturing from hair, and that they inspected and watched the working thereof for nearly an hour, and were unable to discover any difference in the applicability of the machinery to the manufacture of a fabric from refuse hemp and flax, or other fibrous materials of that nature, as well as from hair, and that the facility of production is in all respects the same as when hair is used, and that during such inspection a continuous sheet was produced from refuse hemp and flax at a speed of somewhat more than ninety yards an hour, and is equally applicable to the covering of ships' bottoms, the roofing of buildings, and other similar purposes, as when made of hair, and is in all respects of the same character and texture as the article manufactured by the defendants, which they call patent sheathing.

That the specification of the invention, for which said patent of May, 1829, was granted, does not claim more than the process therein described is capable of performing, and that the descriptions contained in such specification are sufficient to enable any competent workmen to use the same invention, but that the nature of the article or manufacture required to be produced must depend upon the nature of the fibrous materials and adhesive fluid em-

Abbott

ployed, and the subsequent processes to which the felt, or substance in the nature thereof, is subjected.

Affidavit of *William Abbott*, the younger, of Bermondsey-street, Surrey, felt-manufacturer, and *William Crook*, of the same place, foreman to plaintiff.—Saith, that they have perused the copy of an affidavit of Thomas Thomas sworn in this cause, and that although Thomas Thomas hath been employed to repair the steam-engine at the plaintiff's manufactory, he hath never been employed to make or repair any part of the machine or machinery used by the plaintiff in manufacturing felt, or a substance in the nature thereof, according to said patent, except in 1833, to repair the fan of the blowing machine, and to make a wheel, used in moving the pressing rollers, for which purpose the old wheel was sent to his shop as a pattern to make it by.

William Abbott, the younger.—Saith, that in the year 1829, in which said patent was obtained, the defendant, Williams, while employed by the plaintiff to superintend the process and machinery, manufactured therewith a quantity of felt, or a substance in the nature thereof, from waste or refuse hemp and flax, and pronounced the same to be a very good and serviceable article, but that the plaintiff has not used those materials, in consequence of the preference given in the market to felt, or a substance in the nature thereof, made from hair, as being more durable.

Affidavit of *William Abbott*, the elder.—Saith, that the patent of May, 1829, was not purchased by deponent from defendant, Williams, until he had well ascertained that the machine and process as described in the specification, were capable of manufacturing the articles proposed to be made in a proper manner and of hemp or flax.

And he positively denies that the specification of said invention, was enrolled at his request before the capacity of the machine and process to manufacture the said articles had been ascertained, or he knew that the raw material of hemp and flax could not be usefully employed in the machinery or process of manufacture for which the patent was granted; on the contrary, the machinery and process are equally applicable to the manufacture of said article with hemp and flax, or any fibrous material of a similar nature, as well as with hair, and were ascertained

Williams et al.

to be so previous to the enrolment of said specification, and that so far from there having been any undue haste on the part of deponent in procuring said specification to be enrolled, as sworn by Stanbridge and Marshall, the enrolment thereof was delayed till the latest period on purpose to afford the most ample opportunities of testing the capacity of the machine and process, and the correctness of the descriptions in the specification, and of altering such descriptions if the same had been found necessary, and that, in fact, said specification was not enrolled till the twenty-third of November, 1829, being the last day of the six months allowed by the letters patent for such enrolment.

That in pursuance of an arrangement between the deponent's and defendants' solicitors, two gentlemen on each side should inspect the different machines and report their opinions thereon, Mr. George Cottam and Mr. William Carpmael, were named on behalf of deponent to inspect defendants' process and machinery, and did accordingly attend and inspect the same on the 11th and 13th of April last, and that Mr. Francis Bramah and Mr. William Newton, were named on behalf of the defendants to inspect deponent's said process and machinery, and did accordingly attend and inspect the same on the 22d of April last.

That said Mr. Cottam and Mr. Carpmael immediately made a full report of their inspection of the defendants' process and machinery, and stated therein, that they were clearly of opinion such process and machinery were an infringement of the said patent now vested in deponent, and the result of such report was on the 15th of April last communicated to the defendants' solicitors.

The result of the inspection of deponents' said process and machinery by said Mr. Bramah and Mr. Newton, was not communicated to deponent or his solicitors, and that the defendants have not made use of the testimony of said Mr. Bramah, in this suit, notwithstanding his having been so named and appointed by them as aforesaid.

The following affidavits were filed on behalf of the defendants:—

Thomas Robinson Williams saith, that he admits that the patent obtained by him in 1829 was assigned to the plaintiff, and that he enrolled a specification within the

Abbott

time allowed, but that it was enrolled at the request of the plaintiff before it had been ascertained, as it since had, that the machine and process, as described, were not capable of manufacturing the article proposed to be made, in a proper manner, out of hemp or flax, and that the plaintiff knew at the time that the raw material of hemp or flax could not be usefully employed, and that he has never used any other material than hair in the manufacture of felt, or a substance in the nature thereof. Deponent admits that since the month of October, 1836, he, in conjunction with the other defendants, has been engaged in making and manufacturing according to the process mentioned in the patent granted to him in 1833, a substance which they call "patent sheathing," but which he denies to be felt, or a substance in the nature thereof; and he denies that the alleged felt was made according to the process claimed in the patent assigned to the plaintiff, but by a process and machinery on a principle entirely new, and described in the specification of the patent which he obtained in 1833, for "a new combination of fibrous materials, forming, by means of machinery, artificial skins, which might be applied to the purposes for which leather, vellum, and parchment are now used." That the article manufactured by the defendants being made of different materials, and by a different process, have different qualities, and admit of being applied to different uses from the qualities used by plaintiff; therefore he denies that upon the examination, as alleged, that the sheathing sold by defendants differed only from the felt manufactured by the plaintiffs, in respect of the same being made with refuse hemp, or some similar material, instead of hair, and also in being impregnated with a composition of a stronger and more tenacious nature than generally used by plaintiff, so as to cause the article produced to possess greater firmness and consistency, and to bear some resemblance to millboard and pasteboard; but, on the contrary, the articles so made by defendants are altogether of a different nature, and that it acquires and possesses greater tenacity and firmness from the circumstance of its being made of fibrous materials, which cannot be worked by the plaintiff's process.

Charles Stanbridge and *William Forbes Marshall*, severally say, that they have been informed that the plaintiff, previous to the enrolment of Williams's specifi-

Williams et al.

cation of his patent, of 1829, had ascertained by experiment, and well knew as the fact is, that the machine or process therein dèscribed, was, and is incapable of producing any good or useful article from hemp or flax, and that in fact, neither hemp or flax could be applied to any useful purpose by means of the said machine, or that the machine as described was capable of producing a substance to be used as "millboard, pasteboard, or floor-cloth," as set forth in the specification of the said patent.

That about February, 1833, the defendant, Williams, finding that the manufacture of millboard, pasteboard, floor-cloth, and such like materials, required a process on a different principle to that of the plaintiff's, he obtained letters patent for "a new combination of fibrous materials, forming, by means of machinery, artificial skins, which might be applied to the purposes for which leather, vellum, and parchment are now used." That upon the said patent being granted to the said Williams, he entered into copartnership with Leonard Streate Coxe, and George Chambers, and it was worked by them until July, 1835, when they became bankrupts, and the patent having been put up for public sale, by the assignees of the estate, was purchased by these deponents. That at the time of such purchase, they had no knowledge of the existence of the patent of 1829—that when the deponents formed a partnership with the defendant, Williams, neither of them had any knowledge or information of the existence of the before-mentioned patent; and that the partnership has in consequence of such discovery of the patent of 1829, been dissolved. They further say that the invention described in the patent of 1833, and the means of carrying it into effect, are entirely different from the principle of the patent of 1829, which patent only claims the making use of two sheets or webs, consisting of either woven, plaited, laid, or braided wire, or other substances; or even of perforated sheets of metallic or other substances, and the method of subjecting the different materials, whilst between them, to the action of the rollers in such liquors as it may be wished to impregnate the different materials with; that is to say, the specification only shows the use of the sheets or webs, or endless bands, and the subjecting by means thereof, the materials used to the action of the rollers in different liquors, whereby the necessity of previously felting the materials is avoided; but the deponents say that no part of such

Abbott v.

process is used in the invention described, in the specification of the patent of 1833, but that the principle of invention there claimed is, that by means of the exhausting apparatus therein described the fibrous materials which are made to cohere with sufficient tenacity, to enable them to be passed through the immersing trough, without any auxiliary support, except the conducting and pressing rollers; and that it would not be possible to use any such sheets or webs as described in the plaintiff's patent, in the manufacture or process for which the patent assigned to them was granted, and that they do not infringe on the method described in the plaintiff's patent, of subjecting the materials, whilst between the sheets or webs to the action of the rollers, in liquids. That so much of the process described in either patent, as consists of the mere passing of the materials, when impregnated with the liquors used, between the rollers is not new, and that such process and machinery was known and used for similar purposes, long prior to the first letters patent. And deponents say that they believe it would be impossible to make the articles manufactured by them, by the process and machinery described in the specification enrolled under the patent of 1829.

William Newton, Engineer.—Saith, that having been requested by the above-named defendants to inspect the machinery used by them in the manufacture of their articles called patent sheathing, and also to inspect the machinery used by the plaintiff in the manufacture of his patent felt, or a substance in the nature thereof, he did on Saturday, the 22d day of April last, attend at the manufactory of the said defendants, and afterwards, on the same day at the manufactory of the plaintiff, and did inspect and examine the respective machines of the said defendants and the said plaintiff, and that he has since carefully perused the specification of the patent of the 23d of May, 1829, under which the plaintiff manufactures his said patent felt, or a substance in the nature thereof, as well as the specification of another patent granted to the defendant, Thomas Robinson Williams, dated the 14th of February, 1833; and he has also perused the specification of a patent granted to one William Wood, dated the 9th of March, 1815; upon a full and mature consideration of the said several machines, and of the said three several specifications, deponent saith, that the manufacture of the article called patent sheathing, under and by virtue of the

Williams et al.

said letters patent of the 14th of February, 1833, is not an infringement of the patent right of the said plaintiff, under his said patent of the 23d of May, 1829.

That the conducting and pressing rollers for guiding, immersing, and squeezing the material, of which the article to be made is composed, in the tar vat, was known before the patent of the 9th of March, 1815, and the contrivance in such patent described became common property before the date of the patent of 1829.

That the patent of 1829 gives no exclusive right to the guiding, immersing, and squeezing apparatus, or to any other feature, except the endless bands, or webs, which are not used under the patent of 1833.

That if there is any improvement in that modification or arrangement of the rollers shown in the specification of 1829, over the plan originally proposed by the patentee of 1815; yet the patentee of 1833 has not copied or adopted any part of the same arrangement, and if the patentee of 1833 has infringed the right of the patentee of 1829, by passing the material between rollers in the tarring vat, then the patent of 1829 must be bad, because the guiding and squeezing rollers had been previously known and used for a similar purpose.

Thomas Thomas, of Holland-street, Blackfriars'-road, Surrey, Engineer, saith.—That he has been for several years the part maker and principal repairer of the several machines used by the plaintiff and defendants respectively in the manufacture of their respective articles, that is to say, the patent felt, or substance in the nature thereof, of the plaintiff, and the patent sheathing and other articles manufactured by the defendants, and that in his judgment and belief, although the said respective machines can and do produce an article in some degree resembling each other, but differing entirely in substance, yet that the respective machines are in every respect different, and so much so that he, deponent, is not aware of any two machines of a similar description more unlike each other in their principles.

Miles Berry, of Chancery-lane, in the county of Middlesex, Civil Engineer, saith.—That he has carefully perused and considered the specification of the patent of Thomas Robinson Williams of the 23d of May, 1829, under which the plaintiff manufactures his patent felt, or a substance in the nature thereof, and also the specification of another

Abbott

patent of the said Thomas Robinson Williams, dated the 14th of February, 1833, under which the defendants manufacture their article called patent sheathing; and also the specification of a patent granted to one William Wood, and dated the 9th of March, 1815; and upon such perusal and consideration of such three several specifications deponent saith, that the manufacture by the said defendants of the said article called patent sheathing, under and by virtue of the said letters patent of the 14th of February, 1833, is not in his opinion an infringement of the patent rights of the plaintiff's under the letters patent of the 23d of May, 1829.

That the conducting and pressing rollers for guiding, immersing, and squeezing the materials of which the article to be made is composed, certainly became common property before the date of the last-mentioned patents. Mr. Wood most clearly anticipates various modifications of apparatus and modes of working the same, consisting of guiding or conducting, and pressing or squeezing rollers, and states that he only describes it in the simplest form; that in deponent's opinion Mr. Williams must have been fully aware of this fact when he made his specification of 1829, and that Mr. Williams claims under that patent only the application of the endless conducting or carrying-cloths or wire-webs, for the purpose of conducting, immersing, or saturating the materials in the composition, such materials then being in the form of a sheet or layer not in a felted or matted state.

That Mr. Williams, in the specification of 1833, describes and claims a new process or method or manufacturing felted sheathing, that is, by the application of an exhaustion of the air from the underside of such materials, by which he is enabled to produce sheets or layers of materials partially felted or matted together, and of sufficient tenacity as not to require the guiding or conducting endless cloths or wire-webs necessarily used in his former patent.

On behalf of the defendants, the learned counsel contended that they were making according to a patent granted in 1833 to the defendant, Williams, and that the plaintiff must have known that circumstance when he obtained the injunction, and that he had committed a fraud on the Court in not naming that circumstance. That the

Williams et al.

defendants' mode of working was entirely different from the plaintiff's, and they were enabled to make tea trays, and a variety of japanned articles, which the plaintiff was not, nor were such articles contemplated in the patent of 1829; and in behalf of the defendants Stanbridge and Marshall, it was stated that they having dissolved partnership with Mr. Williams, they could not be liable to any consequence incurred by the deed between the plaintiff Abbott and the defendant Williams.

On behalf of the plaintiff, the Learned Counsel argued that the defendants had so taken their patent of 1833, that no person on reading the title of the invention could imagine that it related to the making of felt for the covering of ships, &c., and that the plaintiff could not be expected to have known that circumstance, and that no fraud had been committed by him, and it was contended that there could not be a question that the manufacture of the defendants was an infringement of the patent of 1829, that being proved to a demonstration by Messrs. Cottam and Carpmael; and the circumstance of Mr. Bramah not having made an affidavit in the cause more than confirmed those gentlemen. Indeed if Mr. Bramah's report had been produced, and the defendants were bound to produce it, it would be the strongest evidence in the cause for the plaintiff. Indeed the only evidence produced by the defendants in respect to the question of infringement was the affidavit of Mr. Newton, who ventured, in the face of the specification, to give it as his opinion that nothing further was claimed in the patent of 1829, than the using of two webs, and that the machines used by the defendants were different, but he did not give reasons for this judgment, he did not say that the manufacture produced and the mode of production were not substantially the same, this was left to the other examiners, and their report, which was known to the defendants, was wholly uncontradicted.

The plaintiff cared not about the defendants making tea trays, and such like articles, though that could be found to be an infringement of the patent of 1829, as they could not make tea trays without first infringing the patent by making felt.

The case having been argued at considerable length, his Honour gave his judgment.

The Vice-Chancellor.—Now in this case, if it had at

Abbott v.

all been made out that the plaintiff had obtained the injunction by suppressing a material fact which ought to have been disclosed to the Court, why then, I should have no hesitation in at once dissolving the injunction with costs; but really when I look at the terms in which the defendants' patent of 1833, is couched, it appears to me the plaintiff might with great propriety file his bill in the way he did without at all noticing the patent of 1833. The patent, as I at present understand it, does not appear to me to authorize the defendant, Williams, to any right to make that sort of sheathing which is the subject of the dispute between the plaintiff and defendant, because his invention, as described by himself, was "a new combination of fibrous materials forming, by means of machinery, artificial skins, which might be applied to the purposes for which leather, vellum, and parchment are now used." Now it is quite new to me to hear that leather, vellum, and parchment, were in the year 1833, used for the purposes for which the plaintiff's sheathing was applied; it appears to me he might naturally suppose this patent was granted for the purpose of making materials, which were to be applied to any other purpose than the purpose for which the plaintiff was making his sheathing, and in that respect, therefore, I do not think any blame is imputable to the plaintiff. And it also does appear to me, as I at present understand it, that the second patent does not interfere at all with the first patent, considering the first patent as one which will extend to protect the making in a peculiar manner of the felt or sheathing, for which the plaintiff contends he has the right; the second patent being stinted to the making of artificial skins which may be applied to the purposes for which vellum, parchment, or leather are now used, that is in the year 1833. At present I must also say it does appear to me, provided the patent of 1829 is good, that there has been an infringement of it, but of course my opinion is not to be conclusive in the present stage of the case on that point. My opinion also is, that there has been such a length of usage of the plaintiff's patent, that *prima facie* for the purpose of this injunction, I am bound to consider that patent as good, though I entirely accede to the remark of *Mr. Jacob*, that my *prima facie* opinion, that the patent is good, does not enable me to come to the conclusion that the patent has been infringed;

th of usage
mâ facie
dence of validity
patent.

Williams et al.

but I come to the other conclusion *prima facie*, according to what I now understand on the evidence before me. But it appears to me, that so far as a question is raised about improvement, and which question may be raised for the purpose of rebutting the defendants' right to have the injunction dissolved, although there is no specific case made in the bill which requires the benefit of the improvement, it appears to me that I cannot very well enter into that case until I have it established how far the plaintiff's patent is good; and for these reasons, therefore, whatever might be the right which, under the covenant regarding improvement, the plaintiff might have, if in point of fact the patent of 1829 was void, then he could have no right to improvement, because the improvement could only be an improvement on a thing that existed, and supposing, for any reason that has been assigned at the bar, the patent of 1829 was bad, why, then the patent was nothing, and the right was nothing, and there could be no improvement on nothing; the consequence, therefore, as far as even the question of improvement is concerned, it appears to me necessary that before I finally deal with the question, I must have the point established, whether the plaintiff's patent is good at law, and it seems to me the proper course is to dissolve the injunction so far as it is an injunction applicable to anything else, than the making of that sheathing material, that felt for ships and roofing, for which the plaintiff contends. I must dissolve it, therefore, so far as it seeks to restrain the defendants from making artificial skins which might be applied to the purposes for which leather, vellum, and parchment, were used in 1833; but so far as the injunction at present stands, to protect the plaintiff's right under the patent of 1839, I must continue it till further order. It seems to me right to direct that the plaintiff shall be at liberty to bring such action as he may be advised, in which action the defendants shall have the opportunity of showing the patent of 1829 is bad, if it be so. And the plaintiff shall have the opportunity of establishing the patent, and of showing there has been an infraction of the patent, and that direction must be accompanied with the reservation of all the costs until further order, with liberty for either side to apply: and I do not think I can do otherwise with the case than I have directed.

Mr. Knight.—Your Honour would probably direct the

Abbott v.

party to give further inspection. We will bring the action immediately, we will hand over the names of our inspectors, that they may not bring in persons otherwise than respectable, and they will hand over our names to us. Your Honour will direct mutual inspections of the machinery, because, although that has been done already, it has not been done full enough.

Mr. Wigram.—I hope your Honour will impose upon them terms as to bringing the action.

The Vice-Chancellor.—I have directed, generally, leave to apply. If there is any undue delay you can apply.

Mr. Knight.—We will serve them with the writ to-morrow. We mean to put a stop to these tea-caddies and things.

The Vice-Chancellor. — It seems to me it is quite right there should be a mutual inspection of the machinery.

Mr. Knight. — Your Honour did it in *Morgan* v. *Seaward.**

Mr. Jacob.—Liberty to apply if there is any difficulty.

Mr. Knight.—His Honour must declare that liberty must be given to inspect the machinery of each. I want a declaration of the principle involved in the order.

The Vice-Chancellor.—It seems to me to be right that there should be a mutual inspection of the machinery.

Mr. Knight.—And if that is declared in the order I have no doubt that the parties, who are respectable, at least as far as Messrs. Stanbridge and Marshall are concerned, I have no doubt they will agree.

Mr. Bethell.—As the injunction is now continued with regard to the patent sheathing, it should be clearly understood that it does not interfere with our manufacture of the other articles.

The Vice-Chancellor.—I have said so.

Mr. Bethell.—We are obliged to produce the articles in the shape in which they are applicable to the sheathing as a preliminary process before we can reduce it into the shape in which it is applicable to the other articles.

Mr. Knight.—Then the murder is out. If you will not make, sell, or use for shipping or roofing, you may in the meantime do what you like. What I understand the

---

* Ante, p. 1.

Williams et al.

Perry et al. v. Skinner

Court to say, is this, they are not to make, use, or sell, directly or indirectly, for the purpose of shipping or for the purpose of roofing, but they may make as many tea-trays, tea-caddies, and asses' skins as they like. We do not keep a toy-shop.

Mr. Wigram.—But suppose a man comes to buy so many yards, do I break the injunction by selling that to him?

Mr. Knight.—Beyond all question you do. You must manufacture for yourselves. This is entirely a new case brought forward at the end.

The Vice-Chancellor.—I intend to restrain that, I mean to restrain that very thing.

Mr. Knight.—It would be a mere fraud, the last thing I am sure my friend would wish to lend himself to.

The Vice-Chancellor.—What I mean is this, that you shall not be at liberty to make and sell; as long as you make and do not sell, it does not signify, but you are not to be at liberty to make and sell that article in your manufactory which may be applicable for the shipping and roofing. You might make the tea-caddies and trays yourselves.

Mr. Bethell.—We may make as many things as we like, so that they are not applicable to the shipping and roofing.

Mr. Knight.—You may make as many tea-caddies and trays as you please. It is not to be sold in the shape or uttered in the shape in which any body else may apply it for the purposes of shipping and roofing, but you may paint it and glaze it until the trial, when, I give you notice, I mean to restrain that also, therefore you had better wind up your business as quick as you can. The order is upon both motions.

The Vice-Chancellor.—Yes.

PERRY AND OTHERS *v.* SKINNER.

In the Court of Exchequer, before the Lord Chief Baron (*Lord Abinger*), *Mr. Baron Parke, Mr. Baron Bolland, and Mr. Baron Alderson.*—*Easter Term*, 1837.

THIS was an action brought by the plaintiffs against the defendant for infringing a patent (assigned to the plain-

Perry et al.

tiffs) for the manufacturing of steel pens. The declaration was general, and in the usual form, but stated that, after the assignment, and after the passing of an Act of Parliament, entitled "An Act to amend the Laws touching Letters Patent for Inventions;" to wit, on the 30th day of April, 1836, the plaintiffs, by and with the leave of *Sir R. M. Rolfe, Knt.*, then being His Majesty's Solicitor-General, first had and obtained and duly certified by his fiat and signature in that behalf, entered with the Clerk of the Patents of England, a certain disclaimer and memorandum of alteration in writing of part of the specification, the same not being such disclaimer or memorandum of alteration as extended the exclusive right granted by the letters patent. That such disclaimer and memorandum of alteration were duly filed with the Clerk of the Patents of England, and enrolled with the said specification pursuant to the Statute. The declaration then averred that the defendant, within the term of fourteen years, to wit, on the 20th day of February, 1836, and divers other days, &c., did counterfeit the said invention, and did use and put in practice the same otherwise than in relation to the said parts of the invention so disclaimed, in breach, &c.

The defendant pleaded several matters, amongst others, that as to as many grievances as were committed before the 30th of April, 1836, *actionem non*, because the disclaimer was not enrolled till that date, which was after the committing of such grievances as in the first part of this plea were mentioned, and that so much of the said invention for which the letters patent were granted had been publicly and generally used before the granting of such letters patent, and therefore the said letters patent were void when such grievances were committed. To which plea the plaintiffs, in their replication, said, that such grievances were in respect to those parts of the invention to which the said disclaimer, &c. did not refer, and that such last-mentioned parts of the invention were, at the time of making the grant of the said letters patent, a new invention. To this replication the defendant demurred, giving as a reason that the whole patent was void till the enrolment of the disclaimer.

Mr. Wightman, on behalf of the defendant, supported the demurrer.—The question is, whether a person can be considered to infringe a bad patent, if not, then the entering of a disclaimer so as to set up part of the patent

Skinner

could only have effect after the due entry and enrolment of the disclaimer. The question turns on the construction of the first section of the Act 5th and 6th Wm. IV. c. 83. By the old law the patent would have been void altogether,—the new law allowed the patentee to get rid of a defect by disclaimer and alteration, the Statute would not give a retrospective operation to the disclaimer. The proviso in the first section says, " that no such disclaimer or alteration shall be receivable in evidence in any action or suit (save and except in any proceedings by *scire facias*) pending at the time when such disclaimer or alteration was enrolled, but in every such action or suit the original title and specification alone shall be given in evidence." There is nothing in the Act to make the defendant a wrongdoer by relation. Supposing the defendant had ceased his working on the enrolment of the disclaimer and memorandum of alteration, could the plaintiffs have proceeded against him for past infringement on an invalid patent?—if so, this would be directly opposed to the proviso. There would have been a good defence against the patent before the disclaimer, and therefore the disclaimer could not be of effect excepting for acts done after it was entered. To admit a construction of the Statute which would make a disclaimer apply to an act which had passed, would be holding out an inducement to patentees to enrol specifications claiming much more than they were entitled to do, to the prejudice of other manufacturers.

Mr. Rotch, for the plaintiff.—The Statute has a retrospective operation. The Statute does not contemplate granting new letters patent to commence on the enrolment of the disclaimer, but the original specification is to be taken as if the same had been enrolled as amended by the disclaimer, and the patent is to be good as from its grant, and the language of the proviso is confirmatory of such a construction. The public cannot be injured by taking such a view of the Statute; the public is warned by the Statute to avoid committing infringement on parts of a patent which are known to be valid. If the plea had stated that the grievances complained of were in respect to parts disclaimed, then it is clear the defendant would be relieved.

The Lord Chief Baron—It cannot be doubted that the Act is obscure: it would, however, work a great hardship, Perry et al. v. Skinner.

Boulnois v. Mackenzie.

if the Act could be construed to make parties wrong-doers by relation. The only argument in support of such a view is the language of the proviso as to a disclaimer when an action is pending. We think the sound view is, that the specific introduction of this exception shows that the Legislature did not intend to make parties generally wrong-doers. If they will not allow a benefit of disclaimer during action, the Legislature never could intend to make wrong-doers by relation.

Mr. Baron Parke.—I am of the same opinion. Generally speaking, Statutes ought to be construed according to their precise words; and in this Statute the proviso that the disclaimer shall be deemed and taken to be part of such letters patent, or such specification may possibly admit of the construction contended for by the plaintiffs, viz., that they shall be deemed and taken to be part of the original letters patent, or specification, as the case may be. It is, however, another rule in the construction of Statutes that the precise words may be modified if they lead to absurdity or inconvenience. Here the effect of an adherence to the strict words would be to introduce the inconvenience of making parties wrong-doers by relation. I think that the Act is to the same effect as if the words "from thenceforth" were introduced into it. The only circumstance to cast a doubt on this is the language of the proviso; but that is not sufficiently conclusive to enable us to say that the Legislature meant to make parties wrong-doers by relation.

Act 5 & 6 W 4 c. 83 did not intend in reference to disclaimers to make parties wrong doers by relation, although it will bear a construction that a disclaimer is to be read as part of the original Specn from ~~to~~ the date of the latter.

Mr. Baron Bolland and *Mr. Baron Alderson* agreed. Judgment for defendant.

BOULNOIS *v.* MACKENZIE.

In the Court of Common Pleas.—Michaelmas Term, 1837.

THIS was an application to the Court under the first section of the statute 5th and 6th Wm. IV. c. 83, in consequence of applications having been made by the plaintiff to the Judges in chambers, for better and fuller objections than those which had been filed by the defendant with the pleas. An action had been brought against the defendant by the plaintiff as assignee of letters patent granted on the 21st of September, 1836, to Mr. Poole, of

Boulnois v. Mackenzie

the Patent-office, for Improvements in carriages, communicated to him by a foreigner residing abroad.* The

---

* The specification was as follows :—

"To all to whom these presents shall come, &c., &c.—Now know ye, that in compliance with the said proviso, I, the said Moses Poole, do hereby declare the nature of the said invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof, reference being had to the drawings hereunto annexed, and to the figures and letters marked thereon (that is to say):

"The invention relates to that description of public vehicles called cabs, and consists in the application of improved constructions to certain two-wheeled vehicles, the entrance or door-way for the passengers being behind, as will be hereafter fully described.

"*Description of the Drawings.*

"Fig. 1, represents a side view;

"Fig. 2, a back view;

"Fig. 3, a longitudinal section; and,

"Fig. 4, is a transverse section of a vehicle or two-wheeled carriage constructed according to the invention. In each of these figures the same letters of reference indicate similar parts. The nature of the main framing of the body of the carriage will be readily understood by examining the sections figs. 3 and 4, where such framings are clearly shewn, there being no internal lining; *a*, *a*, an ordinary cranked axle, which is preferred in consequence of its bringing the carriage or body of the vehicle nearer to the ground; *b*, *b*, are the wheels; *c*, *c*, elliptical springs, on which the body of the vehicle is mounted. These springs, as shown in the drawing, are made according to an invention for which a patent was taken by William Boulnois, the younger, bearing date at Westminster, the 30th day of January, 1836; but although these springs are recommended in consequence of the easy motion which is obtained thereby to the body of the vehicle, other springs may be employed; *d*, *d*, are the shafts which are connected with the body of the vehicle by pin-joints, as is clearly shown at *e*, and each shaft passes through a socket, *f*, which is supported by the projecting bracket, *g*, there being sufficient space in the sockets, *f*, to allow of movement therein of the shafts up and down; and *h*, *h*, are springs affixed to each of the shafts, one at top, and the other below, which being within the socket, *f*, and having a tendency to spring from the shafts, by this means the weight on the horse is relieved, the ordinary motion of the shafts acting upon the body is avoided, rendering the vehicle as easy as when on four wheels; *i*, *i*, are the steps for the driver to mount to the driving box, *j*, the construction of which will be evident on examining the drawing; *k*, *k*, are the hooks to which the traces are attached. The shape of the body of the vehicle is clearly shown in the various figures; but it should be remarked, that the same may in some degree be varied, provided the entrance for the passengers behind be retained; *l*, is the step for the passengers to enter; *m*, *m*, are folding doors, which are made in two parts, in order to facilitate the entry of passengers from whichever side of the road the carriage may be drawn up to, though the same may have only a single door if desired; *n*, *n*, are two windows, or glazed openings in front of the

Boulnois

declaration was in the usual form, and the defendant pleaded,—first, That the invention was not new; secondly,

---

vehicle. These windows are shown to be fixtures, but they may be made to open, like the windows of carriages in general, and as is well understood by coach and carriage builders; *o*, *o*, are two ventilators, being two flat narrow boards, capable of closing the opening at *o*, *o*, but, moving on axes, they may be set open to any degree desired by the passengers; *p*, *p*, are two windows or glazed openings at back, which are shown fixed in the drawings, but they may be made to open, if desired; *q*, *q*, are two seats for the passengers, who sit opposite or facing each other, with their sides to the horse, which will readily be understood on examining the drawing, particularly at figs. 3 and 4, where, as before stated, the vehicle is shown in section, in order to explain the nature of the main framing. The interior may, however, be lined according to the taste of the builder. By this arrangement of carriage it will be evident that great safety will be obtained, together with an elegant close carriage, a vehicle of a very light construction, which will be drawn with facility by a single horse. The vehicles shown in the drawing are expressly constructed for two passengers, and to be used for that description of public vehicles called cabs, which, according to the present construction, are justly considered very dangerous vehicles, owing to the liability of persons riding therein to be thrown out, should the horse fall, or the wheels come against any other carriage; but, according to the construction of the above description of carriage, the passengers, in the event of like accidents, or in the event of a horse running away, may with facility get out of the vehicle by merely unbolting the doors on the inside and stepping out, taking care, however, when the horse is running away to hold on and run behind for a short distance, to prevent falling.

"I will now proceed to describe the second vehicle, differing from that above described in some particulars, but having the same common properties and advantages of the door, or entrance for the passengers, being behind. In the present case, however, the passengers sit with their faces to the horse, and side by side of each other.

"Fig. 5, shows a side view;

"Fig. 6, a back view; and,

"Fig. 7, a longitudinal section of a vehicle constructed according to the second part of the invention. In each of these figures the same letters of reference are used to denote similar parts; and it will only be desirable further to add, in respect to this second carriage or vehicle, that the seats are placed one on each side of the door-way or entrance, each seat being suitable for one person; and there may, if desired, be a folding seat to lie across the door-way when the door is shut, and thus making room for three persons, as is shown by dotted lines in fig. 6. The front part of this vehicle may be more or less open, according to the taste of the builder, and may either have windows or folding blinds; and where the door is made in one part, as shown in fig. 6, a blind or shutter may be slided, formed within the door, and capable of sliding up and closing the openings, in like manner to the blinds to the doors of ordinary carriages, and which is well understood. It should be remarked, that in various constructions of carriages and vehicles the entrance for the passengers has been from

Mackenzie.

That Poole was not the true and first inventor; thirdly, That Poole was not in possession of the invention at the time of making and sealing such letters patent; fourthly, That at and before the time when the letters patent were granted the invention was in public use; fifthly, That the supposed improvements were not a new invention as to the public use thereof; sixthly, That the specification did not describe and ascertain the nature of the invention. The notice of objections filed with the pleas according to the Statute simply repeated the language of the pleas.

The plaintiff on summons obtained an order by *Mr. Justice Vaughan* requiring the defendant to give the names and places of abode of the persons referred to in the fourth plea, and further and better objections under the fourth, fifth, and sixth pleas, and to be precluded from calling witnesses in support of those pleas. In consequence of this order the defendant filed further objections, setting forth in detail the parts of the specification which were not new, and gave the address of one person who had before used the invention.

Sir F. Pollock obtained a rule to show cause why such order of the Judge should not be set aside, and that the objections should stand as first delivered against this rule.

Mr. Sergeant Wilde and *Mr. Hoggins* now contended that the Judge had power to order further and more exact objections than those originally given. The objections stated no more than the pleas, this could not be the intention of the Statute, the object of which was to give

behind; that property is not therefore claimed generally, but only when combined in carriages such as are above described. And I would have it understood that no claim is made to any of the parts separately, nor is the invention confined to the precise arrangement here shown, so far as the shape or figure of the body of the carriage is concerned; but what is claimed as the invention under the present letters patent, is, first, the construction of a two-wheeled, two-passenger, one-horse vehicle, such as is shown in figs. 1, 2, 3, and 4, of the drawings, wherein there are seats for two passengers, one opposite the other, with the doorway or entrance behind, when the same is applied to that description of public vehicles called cabs. Secondly, the construction of a two-wheeled two or three passenger one-horse vehicle, such as is shown at figs. 5, 6, and 7, of the drawings, wherein there are two seats, one on each side of the door-way or entrance for passengers to sit, with their faces towards the horse, combined with a door or entrance behind, when the same is applied to that description of public vehicles called cabs.—In witness whereof, &c.—M. Poole."

Boulnois

such information to the plaintiff that he might not be taken by surprise at the trial. The plaintiff was certainly entitled to know who had used the invention before the date of the patent. If the invention had been publicly used by parties, the defendant could not be injured by the plaintiff being made acquainted with that fact, and the parties who had used it. If that defence be honest, then the plaintiff could not bring counter evidence; but if dishonest, the plaintiff should have an opportunity of calling evidence to show that it was so.

Sir F. Pollock and *Mr. V. Richards* for the defendant, supported the rule, and said it would be unfair to the defendant to call on him to expose his defence, and not only that, but the exact evidence on which the defence was to be established: this was a very different thing to the Judge at chambers requiring parties to a suit to produce a deed. The defendant in an action for infringing a patent could not prove anything which was not set out in the objections; if, therefore, he did not give sufficient information in his objections, it was at his own peril, the sufficiency of the notice would be decided at the trial when any particular evidence was tendered; and although the defendant might only be able to give evidence of one person using it, many persons with whom the defendant was unacquainted might be brought at the trial to speak to the seeing that party using it, and in most cases it would be impossible to give the names and addresses of all parties; and it would be a great hardship on the defendant if he were deprived of giving such evidence, because the Judge had confined the objections to the parties whose names and addresses were given in the notice filed with the pleas. In *Crofts* v. *Peach** the Court had held that a plaintiff could not be required to produce specimens of articles produced under the patent. If such orders as the present were enforced it would rest with the Judge at chambers and not on a defendant, what defence shall be made to an action for infringement. These cases were not to be compared with cases of set-off.

The Lord Chief Justice.—This is an application to set aside two orders of a Judge at chambers; one, for further and better objections in answer to an action

---

* Ante, p. 233.

Mackenzie

for infringement of a patent;—that has been complied with, and therefore there is no occasion for setting it aside; the other, for the address of James Mann and other persons, who are alleged by the defendant to have used the invention before the plaintiff. To a certain extent that order has also been complied with, for the address of James Mann has been furnished; to that extent, therefore, it is unnecessary to rescind it; and the only question is, whether it should be rescinded as to the names and addresses of the other persons. I accede to the proposition that the Court has the right to model these proceedings under its general jurisdiction; and I protest against the word usurpation which has been employed on the part of the defendant. It is admitted by the Learned Counsel that this jurisdiction was exercised in the reign of Henry the Seventh; it has constantly been acted on ever since, and it is most beneficial to the parties, who would otherwise be driven to a Court of Equity. But looking at the words of the statute 5 and 6 Wm. IV., c. 83, s. 5, I think it falls clearly within the same construction as the Statutes of set-off. I cannot see any objection to the Court's looking at notices delivered by the defendant, and determining whether or not they are sufficient. At the same time there is a generality in the words of the section which leaves it open to doubt, whether under the words notice of objection, we can require the defendant to furnish the names of those who are alleged to have used the plaintiff's invention. We shall, therefore, rescind so much of the said order as requires the defendant to furnish the names and addresses of those other persons. The consequence will be, that the Judge at *Nisi Prius* will admit or reject evidence as to those persons, according as he may deem them to fall within the terms of the notice or not; and then, one of the parties will tender a bill of exceptions. I regret that the defendant declines to preclude this inconvenience by complying now with the Judge's order.

Mr. Justice Vaughan.—It is true the order is new in specie; but before the recent Act and the new rules of pleading, the question was not likely to arise, because the defendant might give in evidence whatever he pleased under the general issue. I think the construction I put on the Act was correct. It meant to afford the plaintiff more specific information than was given by the defend-

Boulnois v. Mackenzie.

ant's plea; and, therefore, I think the present notice insufficient; for if the defendant fails as to the alleged user by James Mann, he has only to resort to the others, as to whom the plaintiff must now be taken by surprise.

Mr. Justice Bosanquet.—I entertain no doubt as to the power of the Court to decide on the sufficiency of these notices of objection. I do not consider it to have been created by the late Act of Parliament, but the fifth section of the Act engrafted itself on the practice already existing. The practice as to notice of set-off is exactly analogous. The defendant originally gave merely the heads of his set-off, which afforded the plaintiff little information; the Courts, therefore, required him to furnish such particulars as should enable the plaintiff to understand what was to be proved at the trial; not, indeed, to lay open his case, or the evidence by which it was to be supported, but to give a reasonable account of the nature of the transaction. I have no doubt, therefore, of the power of a Judge to order a further notice of objections; but I think the order goes too far in requiring the names of all the others, who are alleged to have used the invention. *Andrews* v. *Bond* (8 Price, 213, 528) is in point. There the plaintiff had been nonsuited, on the ground that a notice of set-off had given sufficient information of the sum intended to be set-off against the demand, and that the defendant was not precluded, by his particular set-off, from entering into a proof of a counter-demand not stated there: that nonsuit was afterwards set aside, and the Court, considering that he was precluded, granted a new trial.

Notices of objection not created by Act 5 & 6 W. 4 c. 83 but only engrafted on former practice

object of notice of objections

Mr. Justice Coltman.—As far as the jurisdiction of the Court is concerned, I think this question must be decided on the same principle as questions under the Statute of set-off. The recent Statute, no doubt, requires a pretty full notice to restrain the generality of a defence; but, perhaps, it would be throwing too great a difficulty on the defendant, to require him to disclose the names and addresses of all persons who are alleged to have been seen using the plaintiff's invention. To that extent, therefore, I think the Judge's order should be rescinded.

Rule absolute.

Lukey v. Robson

LUKEY *v.* ROBSON.

In the Court of Chancery, before the Vice-Chancellor (*Sir L. Shadwell*).
December 16, 1837.

Mr. Knight Bruce (with *Mr. Rotch* and *Mr. Bagshawe*) appeared for the plaintiff. An *ex parte* injunction was obtained two years ago, by which the defendant had ever since been restrained from making a particular chemical combination for the purpose of producing instantaneous light, on the ground of an alleged infringement of a patent right granted to Samuel Jones, and enjoyed uninterruptedly by the plaintiff since 1828.* The invention consisted in the novel and peculiar adaptation of certain chemical substances, which were before known to produce, in combination, a certain result, by less inconvenient

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—Now know ye, that in compliance with the said proviso, I, the said Samuel Jones, do hereby declare that the said invention is fully described and ascertained as follows, (that is to say):—Into a globule or small vessel of glass either of a spherical, cylindrical, conical, elliptical, or angular form, of the size of from one sixteenth part of an inch, to two inches long, and from one thirty-second part to half an inch in diameter, there should be introduced sulphuric acid, varying in quantity according to the size of the globule or other glass vessel, which, however, is not to be completely filled with the acid, and then the aperture or apertures in the same, is or are to be hermetically sealed or closed by melting the glass by heating it by the blow-pipe, or otherwise, as may be found convenient, so that the admission of the atmospheric air, and the escape of the acid are prevented. The bulb or other glass vessel containing the sulphuric acid is then to be wholly or partially enclosed in, or surrounded by, oxymuriate or chlorate of potash, compounded or mixed with a combustible material or materials, such as animal or vegetable fat, camphor, inflammable gums or resins, sulphur and its inflammable combinations, farinaceous powders, powder from fungi, woods, bark, or vegetable fibre, and vegetable sugars. These combustible materials may be used either as a powder or as a paste made with mucilage or water, and in such proportions as circumstances may render desirable. The proportion of oxymuriate or chlorate of potash, should not be less than one part to two parts of such of the above-mentioned combustible materials, as may be combined, compounded, or mixed with it. The globule or bulb of glass thus prepared, should then be enclosed by or attached to paper, wood, cotton, linen, or other combustible material intended to be ignited; and then by the application of a blow or sufficient pressure to break the globule or bulb of glass, the acid in the same will be brought into contact with the composition, and instantly take fire and ignite the combustible material with which it may be in contact.—In witness whereof, &c.—SAMUEL JONES."

Lukey v.

means, and while adopting the old principle of confining phosphorus in a bulb or globule of glass from the action of the atmospheric air, it substituted sulphuric acid, which was kept artificially separate from the oxymuriate or chlorate of potassa combined with any one of a number of combustible substances (such as fat, resin, sugar, &c.) enumerated in the specification, and enclosed by wood, paper, or cotton. The sulphuric acid became united with the other ingredients by a blow or hard friction, and ignition was instantaneously produced. The defendant admitted the infringement of the patent, and having made no motion to dissolve the *ex parte* injunction, the case now came before the Court on bill and answer. The objection taken by the defendant was the alleged want of novelty in the invention. It was not disputed that the principle, as well as the consequences, of the chemical combination of the various substances employed, had been known and partially used for several years before the date of the patent; but the argument of the plaintiff was, that he had effected such a new combination of old materials as to produce a known result by much more convenient means, and thereby acquired a property in the adaptation, which a Court of Equity would protect. This principle was supported by the language of *Lord Tenterden* in *The King* v. *Wheeler*,* who, when speaking of the word "manufacture," said, it might be extended to any process to be carried on by known implements or elements acting on known substances producing a known end, but producing it in a cheaper and more expeditious, or in a better and more useful manner than it was produced before.

Mr. Wigram and *Mr. Bellamy*, for the defendant, complained of the unfairness with which the suit had been carried on against him. The answer positively stated, the defendant had received permission of the plaintiff to do the act complained of, and that allegation had not been contradicted. The absence of all novelty in the invention, however, was fatal to the present claim. If it was the principle of excluding a chemical substance from the action of air, and producing ignition by destroying the separation between the two properties, that had been known and used, and was even published to the world by Accum in 1807, and if it was the combination of sulphu-

---

* Vol. i. p. 394.

Robson.

ric acid with chlorate of potassa and one of the other substances enumerated, the combination had been used in every form it was possible to suggest. Keeping the substances separate was no novelty, for they could not chemically exist together, nor was the distinction between a blow and the friction mentioned by Accum, sufficient to sustain the patent. The specification, therefore, by claiming more as new than the plaintiff had any right to, was untrue, and, being untrue, was therefore bad in law. Courts of Law had always given a strict interpretation to specifications for the protection of the ignorant, and if more was claimed than the patentee was entitled to, it was held to destroy his right. *Lord Ellenborough* had said, that if, in stating the means necessary for the protection of the end, the party overstepped the right, and appropriated more than his own, he could not avail himself of it. And *Lord Eldon* upheld the same doctrine in *Hill* v. *Thompson*,* declaring that if the patentee asked more by his specification than he was strictly entitled to, his patent was thereby rendered ineffectual to the extent to which he would be fairly entitled. In *Sanders* v. *Aston*,† the principle was again established by all the Judges in the King's Bench. On these grounds the injunction must be dissolved.

The Vice-Chancellor said, the language of the specification appeared to him free from obscurity. The plaintiff had discovered such a mode of preserving sulphuric acid in a state of proximity to certain inflammable substances, as that it might be suddenly brought in contact with them at any moment it was required, or kept separate for any length of time; and it was in this his invention consisted. It was not in the use of sulphuric acid and oxymuriate of potassa or the little globules, which might have been all known before; but it was the discovery of the whole combination, consisting of four known substances, described by regular steps in the specification, for which the plaintiff had obtained a patent, and now claimed the protection of the Court. The evidence, he thought, sufficiently proved the novelty of the adaptation, and as the injunction had been suffered to go undisturbed so long, the Court could not be doing wrong in upholding it.

Undisturbed enjoyment primâ facie evidence of right

---

* Vol. i. p. 369.

† Vol. i. p. 510.

Fisher v.

FISHER *v.* DEWICK AND ANOTHER.

In the Court of Common Pleas, before the Lord Chief Justice (Tindal), Mr. Justice Park, Mr. Justice Vaughan, and Mr. Justice Coltman. —Trinity Term, June 13, 1838.

THIS was an action brought by the plaintiff, as assignee of a patent granted to William Sneath, for the manufacture of lace.*

The defendants pleaded,—First, Not Guilty; secondly, That the patentee did not particularly describe and ascertain the nature of the invention; thirdly, That the alleged invention was not any improvement in machinery used in making bobbin-net lace; fourthly, That the patentee was not the first and true inventor; fifthly, That the invention was of no use, benefit, or advantage; sixthly, That the invention was not a new invention; seventhly, That the patentee did not assign the letters patent. With these pleas the defendants delivered the following notice of objections under the Statute:—

First, That the patentee was not the first and true inventor of the invention described in the specification, or any part thereof;

Second, That the improvements pretended to have been invented by the said W. Sneath were not invented by him;

Third, That the various improvements described under the said Letters patent were not new;

---

* The specification was very voluminous, and its introduction here would not facilitate the understanding of the present case. A short statement of the invention will be sufficient to the understanding of the pleas and objections.

The object of the invention was to make bobbin-net with spots therein, when working by machinery. Before the patent, bobbin-net or lace had been made on the pillow by hand, with spots, by accumulating the threads of which the lace was made into opaque masses at places, and when making bobbin-net by machines, spots had been made therein by the use of additional or extra threads, the extra threads being cut off between spot and spot. By the new machine bobbin-net was to be made with spots therein composed of the same thread as the bobbin-net itself, and this was done by causing the machine to stop at intervals, and then to bring into action certain additional apparatus, so as to accumulate threads into spots; the spotting machinery then was put out of motion, and the machinery for making the plain lace went on working for a time, and then again the spotting machinery, and so on, thus making bobbin-net with spots without additional threads.—W. C.

Derrick et al.

Fourth, That if any parts were new they were useless.

Fifth, That the patentee did not ascertain with sufficient certainty the nature of the improvements, nor did he describe the manner in which the same were to be performed.

Sixth, That the improvements, or some of them, were in public use long before the granting of the patent.

Seventh, That the specification so badly described the invention, that a machine could not be made which would produce the result described.

Eighth, That there were several machines used for making bobbin-net, and that the improvements were not such as to be applied to several kinds of machines.

Ninth, That the patent was granted for certain improvements in machinery for the manufacture of bobbin-net lace, whereas the specification did not show any improvements in such machines.

Tenth, That the machine for making bobbin-net lace was complete in itself, and was not improved by any matter for which the letters patent were granted.

Eleventh, That the machinery, so far as it was for making bobbin-net, was old, and had been in general use before the date of the patent.

Twelfth, That the title of the patent was more extensive than the invention described by the specification.

Thirteenth, That the invention described in the specification did not correspond with the invention for which the letters patent were granted.

Fourteenth, That the patentee only claimed the parts marked with numerals, whereas there were parts marked with letters, without which the alleged invention would be incomplete.

Fifteenth, That many directions in the specification were useless, and tended to mislead.

Sixteenth, That the parts claimed were not improvements, and ought not to form the subject of letters patent.

Seventeenth, That the invention was not of sufficient consequence to form the subject of letters patent.

Eighteenth, That certain parts described had before been in combination and in use before the date of the patent.

Fisher v.

Nineteenth, That the description of the specification and the plans were at variance.

Twentieth, That the defendants would shew all such further objections to the patent and specification as the Court might consider were open to them.

These objections being considered too general, the plaintiff applied for and obtained a Judge's order for further and better particulars of objections. *Mr. Wightman* now applied on behalf of the defendants for a rule *nisi*, to rescind such order; to require particulars more specific than those given would be, to compel the defendants to disclose their whole case, and require a prolixity of detail, which would defeat rather than advance the object of the Statute, which was to save expense to the parties. The Legislature did not, in passing the Act 5 and 6 W. IV., c. 83, intend to proceed to such an extent as to require every detail of defence to be given. The new rules of pleading had come into force pending the passing of the Act, and the Legislature had not been informed of the modern mode of pleading.

Mr. Sergeant Wilde with *Mr. Hoggins* showed cause against the application. The objections were evasions of the Statute, which required that the particulars should afford information beyond what the pleas conveyed; the real objection which was to be relied on ought to be communicated to the plaintiff. In *Boulnois* v. *Mackenzie*,* a mere literal compliance with the Statute was considered not sufficient by the Court. The objections, as stated in the present case, tended more to mislead the plaintiff than to give information. Formerly, in these cases the general issue only was pleaded, which allowed all sorts of objections to be taken by the defendants. By the new Statute the exact nature of the objections was to be given.

Mr. Wightman.—The object of the Statute was to obtain a general statement of the objections, not a particular or exact statement; in *Boulnois* v. *Mackenzie*, the objections were very slightly altered, and the present objections were in conformity with that case before the orders now sought to be rescinded.

The Lord Chief-Justice (*Tindal*) gave judgment as follows:—I am of opinion in this case that the rule must be discharged. The question is, whether there is in this particular of objections that has been delivered, matter that

---

* Ante, p. 406.

Dewick et al.

is so uncertain and indefinite, as to be calculated rather to mislead than inform the party to whom the notice is given. I think there are several which, if it becomes necessary, I will call the attention of the parties to. But I take the general object of the Act to have been as *Mr. Wightman* has properly stated, not to limit the grounds of defence on which the defendant thinks proper to stand, —that never was intended; he may still say that the patent was not new, that it was useless, and that the specification was bad. But the object of the previous clause of the Statute was intended to limit the expense of a trial of this sort, considering the situation of both the parties, and more particularly to prevent the plaintiff, the patentee, from being upset at *Nisi Prius*, by some sudden turn of evidence he never expected being brought against him, when it was too late to meet it. Therefore, when the Statute says, that notice of the objections shall be given, it means, such notice that shall convey information to the mind, such as an honest party meant to rely upon at *Nisi Prius*, and such a notice as the patentee would give if placed in that situation. I am not at all afraid of the prolixity to which *Mr. Wightman* has alluded, or the necessity to point out with great particularity the defects in the patent, for I am certain that the defendant, who brought into Court particulars of objections amounting to ninety-six, would soon find the effect it had on the Jury; he would find how much better it was to rely on those which were substantially the grounds of objections as to the uselessness of the article, than putting in every possible objection.

Object of notice of objections

I think there are two or three which are more calculated to mislead than inform the party. The part wherein he states "that certain parts were useless and unnecessary," the plaintiff must hunt through the whole to find out what parts they are. Again, where he states "that certain parts of the machine are not duly described and are not improvements," there again he must hunt out those parts; "that the improvements or some of them have been used before." If he consults his own interest let him find out those on which he really means to insist at the trial,—"that the alleged improvements are imperfectly described in the specification, as contained in the declaration," let him give a particular of the items on which he means to rely.

Fisher v.

Mr. Justice Parke.—I am of the same opinion. I do not think it is necessary for the Court to point out how the particular is to be amended. These things happen continually under the new Act of Parliament, they are constantly before us at chambers. We never state in what respect the particular is imperfect, but all we say is, that it is imperfect. Now this Act of Parliament to which my Lord has referred,—the fifth section of that Statute shows that the patentee is the great object of the Legislature's attention. For whether he be the plaintiff in the action or the defendant in a *scire facias* to repeal the patent, in either case he is to be furnished by the objector with the objections he intends to insist upon at the trial. And it is most wise that it should be so when a man gives you one hundred objections; and *Mr. Wightman* says that he will take all possible objections which he can under the power given, the Statute having required that he should state specifically his objections. I never saw a clearer case in all my life.

Notice of objection is for protection of patentee

I was one time at the Bar, and I dare say I was as pertinacious in argument, as some Counsel are now-a-days; and I remember upon one occasion, the last day, or the last but one of term, *Lord Kenyon* saying to me, (though not offensively I am sure, for he loved me dearly,) "Mr. Parke, when the brains are out a man will die." And I think *Mr. Wightman's* brains were out on this occasion long ago.

Mr. Justice Vaughan.—I am of the same opinion. When the case was before me I certainly understood it was intended to raise the question if I had a right to interfere, and to grant to the party the opportunity of adding to the objections he had already made.

As to the Act of Parliament, it was said in the former argument, that when the Bill was before the Legislature the new rules were not in operation, that when that Act was drawn it was drawn without reference to the new rules coming immediately into operation, and one can easily understand why it was imperative to have some objections stated. But now it is said that the plea gives all the notice to the party that the Act of Parliament requires, but if it does require anything further, (and that seems to be the opinion of us all,) then comes the question, have we that information, or does this which is called a "notice" impart any knowledge whatever to the party

Derrick et al.

who has a right to know what the objections are? I think it does not; I think the object is to mystify and keep out the truth, so that the patentee might not know what it is he has to meet. And I think that instead of limiting the expense of actions it would increase it, and instead of the Act being a benefit it would be quite the reverse, it would be a curse rather than a blessing.

Mr. Justice Coltman. — I am of the same opinion. It is incumbent on the Court before they send a cause down for trial, to see that the objections to the patent are stated in distinct and intelligible terms in order that the party by a general expression, without assuming that one matter is intended to be objected to, may not be enabled under cover of an ambiguity of language to put in a further objection to suppress the patent. It seems much more desirable that it should be determined before the parties go down to trial than after going down to trial, on an ambiguity of that sort the party should come again to move for a new trial, in order to rectify that which ought and might have been set right in the first instance. And though it is undoubtedly true that the party is not to be precluded from any objection whatever that exists to the patent, and that he has a right to state every one of them to the full extent if he chooses, yet it seems to me it must be done in intelligible and distinct language, so that it is clear what the objections are upon which he relies. And though it is true that may lead, if the party chooses to insist on his right, to great prolixity of statement, yet no person who is well advised, (and in this case he would be well advised,)—no person would think of going to a jury with such a millstone round his neck as ninety-six objections. I think there is no ground for setting aside the order.

Particular objections to patent should determined befo going to trial

Mr. Sergeant Wilde.—This being an appeal without the least foundation from the Judge's order, I trust your Lordships will discharge this rule with costs, otherwise these motions will be perpetually made to the Court, on speculation as to how a Judge's order may be evaded.

Lord Chief Justice Tindal.—Let there be costs in the case.

Rule discharged.

In re Bodmer's patent.

Chanter v

IN RE BODMER'S PATENT.

Before the Privy Council,—Present, Lords Brougham, Erskine, Langdale, Baron Parke, Dr. Lushington, and Sir H. Jenner.—November 29, 1838.

This was an application by the patentee, J. G. Bodmer, praying the extension of patents granted to him, for "certain improvements in machinery for cleaning, carding, drawing, roving, and spinning of cotton and wool."

The Petition was presented in May, 1838, the patents having been granted in 1824, and notices and advertisements duly entered according to the Statute. Caveats were entered against the application, and the parties were entitled to four weeks' notice. Their Lordships appointed the 17th August for hearing the case, on which day, however, a sufficient number of members to form a council could not be obtained; and the 28th November was appointed, at which time the parties who had entered the caveats did not appear, but had withdrawn their opposition.

The Attorney-General (*Sir J. Campbell*) objected, on behalf of the Crown, to their Lordships proceeding in the matter, because the patents had expired. Their Lordships were of opinion that the words, "prosecuted with effect before the expiration of the term originally granted in such letters patent," required something more to be done than the presentation of a petition. Their Lordships, therefore, refused the application.*

CHANTER *v.* LEESE AND OTHERS.

In the Court of Exchequer, before the whole Court.—Trinity Term, 1838.

This was an action brought under an agreement, reciting that the plaintiff was possessed of several letters patent granted to different persons but assigned to the plaintiff, and it was agreed between the parties in the suit, for the consideration mentioned, that the defendants should have the exclusive right to use, manufacture, and sell the several inventions, except in certain towns, and that the defendants should pay to the plaintiff 400*l.* per annum during the existence of the agreement, and that the defendants should further pay the sum of 5*s.* per horse-power for all

---

* The parties interested used every effort to overcome the objection, and the consequence was the further Statute 2 & 3 Vict., c. 67, was passed, under which a further application was made, and the additional period of seven years granted to Mr. Bodmer.

Leese et al.

boilers made according to one of the patents, to the patentee thereof, calculating ten superficial feet of fire bar as one horse-power when used for steam-engines, and five per cent. on the selling price of all boilers when not used for steam-engines, and by the agreement various other payments were to be made in respect to other of the inventions so patented. Each party, by the agreement, had the power, by giving six months' notice, to terminate the agreement at the end of five, seven, or ten years.

The action was brought for the non-payment of 200*l.* for the first half-year. The first count of the declaration set out the agreement, and averred that 200*l.* became due under the agreement, the breach being for the non-payment of 200*l.* The defendants pleaded that the invention for furnaces was not new at the granting of the letters patent; also, that the supposed improvements in furnaces was not invented and found out by the patentee, which the plaintiff well knew before entering into the said agreement. To these pleas the plaintiff demurred specially, because the pleas did not answer the whole of the first count, and that the matter, if true, constituted no answer to the promise of the defendants in the first count involved, as it only tended to invalidate one of the patents mentioned. The defendants also pleaded non assumpsit, and this issue was tried at the Lancaster Assizes, in the spring of 1838, and the said agreement was put in. Application was made for a nonsuit, by reason of there being a variation between the declaration and the agreement, also that the action ought to have been brought in the joint names of the plaintiff and some of the patentees. In respect to the first point, the Counsel applied to amend. The Learned Judge declined, as there was a demurrer upon the record. His Lordship afterwards directed the Jury to find for the defendants, under the Statute 3 and 4 Will. IV., c. 42, in order that the plaintiff might apply to the Court to amend. And a rule *nisi* was granted in the next term, and was ordered to come on for argument, with the demurrer in the cause.

The case was argued at great length, but the following judgment will show the points raised.

The Lord Chief Baron (*Abinger*). — We think the judgment ought to be for the defendants on the demurrer. The declaration is founded upon the contract and nothing but the contract. If a man contract to

Chanter v. Leese et al.

pay a sum of money in consideration that another has contracted to do certain things on his part, and it should turn out before anything is done under it that the latter is incapable of doing what he engaged to do, the contract is at an end. The party contracting to pay the money is under no obligation to pay for a less consideration than that for which he has stipulated. If indeed he does not accept of a partial performance, and to a certain extent enjoys the benefit of that for which he stipulated, it may become a question whether he may not be liable upon an implied contract to pay for what he has had, or where the consideration is in its nature capable of being divided and the payment apportioned by the terms of the contract, there may still be a right to recover the portion due upon the original contract. So where a party takes an estate under a conveyance with a warranty of title in the vendor, he cannot afterwards object to paying the consideration on account of the want of a good title to a part of the estate, but must resort to his action on the warranty. This was the case cited in the argument. But in the present case it does not appear to the Court that the defendants ever accepted or enjoyed any part of the patents which were the consideration of their agreeing to pay 400*l.* a-year to the plaintiff, nor that the sum they so agreed to pay can in any manner be apportioned amongst the different parts which he might have had the possession of, all and each being an entire consideration. The plea, therefore, impeaching that consideration is a good plea to avoid the whole contract as it appears on the record.

With respect to the proceedings on the rule we are rather inclined to think that this contract being with all of the parties founded upon a consideration to part of which each was a consenting party, the action ought to have been by all upon the promise made to all, though only one was to receive the money, but it is not necessary to give any judgment on this point, because we think there was a variance between the declaration and contract in not setting out all the contracting parties, and that the plaintiff, therefore, ought to have been nonsuited.

Judgment for the defendants on the demurrer, and rule absolute to enter a nonsuit.

Westhead v. Keene et al.

WESTHEAD *v.* KEENE AND OTHERS.

In the Court of Chancery, before the Master of the Rolls (Lord Langdale.) December 3, 1838.

The bill stated, that the plaintiff by letters patent granted to him on the 16th of February, 1836, secured to himself for the term of fourteen years, especial leave and power to make and vend a certain invention, being an improved method of cutting caoutchouc or india rubber, leather, hides, and similar substances, so as to render them applicable to various useful purposes: that the plaintiff, in compliance with a proviso in the said letters patent, particularly described and ascertained the nature of his said invention, and in what manner the same was to be performed, by an instrument in writing under his hand and seal, dated the 10th of August, 1836, explaining therein the aforesaid particulars by drawings, and a description thereof, and did enrol the said instrument or specification in the Court of Chancery on the 16th of August, 1836; and in the specification were the words following:—"Now, although the machine, which I have above described, answers the intended purpose of enabling me to carry into effect my improved method of cutting caoutchouc or india rubber, leather, hides, and similar substances, so as to render them applicable to various useful purposes, I am fully aware that the same may be variously modified; as, for instance, instead of imparting a rectilinear or progressive movement as well as a rotatory motion, to a piece of caoutchouc or india rubber, leather, hides, or similar substances, intended to be cut into fillets, a revolving motion only may be imparted; and by causing the pedestal or bearings upon which the revolving cutters work, to be fixed upon or attached to a sliding carriage, and made to advance in the direction of the material to be operated upon, a similar effect may be produced, and the caoutchouc, leather, hide, or other similar substance may be cut into fillets or tapes of the required thickness. It is also obvious that instead of using revolving or circular cutters, longitudinal or straight knives or cutters may be applied, to which rapid reciprocating motion may be given for the purpose of cutting the caoutchouc, hides, and similar substances, into

Westhead v.

fillets. The position of the various motions and parts of the machinery for the accomplishment of my method of cutting the materials, may also be considerably varied if required, and rendered more completely self-acting, and independent of the operative or attendant: but as one great advantage arising from the adoption of my improved method is, that of cutting pieces of material of irregular shape and size, the adjustments of which must always depend on the judgment of the operator, I have considered it best to have the machine also greatly dependent on his or her attention: I, therefore, wish it to be understood, that I claim as my invention, not only the machine hereinbefore described, but also any modification of such machine by which my improved method of cutting caoutchouc or india rubber, hides, and similar substances, into a band, tape, or fillet, by means of a revolving or other cutter acting on the exterior edge of such materials, and regularly cutting the same in a spiral direction towards the centre can or may be effected."*

The bill further stated, that the plaintiff, about the date of the letters patent, constructed two machines, according to the said invention and specification, and used the same on his own account, and applied such machines to cut, after an improved manner, caoutchouc or india rubber, hides, and other similar substances, so as to be applicable to various useful purposes, and, in particular, to cut the aforesaid materials from the shape of a flat disc or solid piece into continuous fillets: that the defendants Charles Keene and Christopher Nickels, in March, 1836, without the plaintiff's license or consent, constructed a machine, in all respects the same as the machines made by the plaintiff, and the same as the plaintiff's said invention protected by the said letters patent. That an Act of Parliament was passed on the 15th of July, 1837, entitled, "An Act for forming and regulating the London Caoutchouc Company, and to enable the said Company to purchase, by deed or instrument in writing, certain Letters Patent," whereby power was given to the twelve persons therein named, who formed the Joint-stock Company, to purchase the said letters patent of the 16th of February, 1836, and the invention therein comprised. That, prior to the passing of the said Act, and in Novem-

---

* The question raised did not turn on the construction of the specification, and therefore it is unnecessary to insert the same at length here.

Keene et al.

ber, 1836, negotiations took place between the plaintiff and defendants, the Company, for the sale of the said letters patent, but no written contract regarding the same had been signed by or on behalf of the Company or the plaintiff.

The bill then charged, that the defendants the Company claimed an interest in the patent, and that, in the principle of construction and mode of application, the said machine, constructed and used by the defendants Keene and Nickels, was precisely the same as the machines invented and constructed by the plaintiff, and protected by the letters patent; and that the pieces or parts into which the caoutchouc and the said other materials were cut by the defendants' machine, were precisely the same as those into which the same materials were cut by the plaintiff's machines.

The bill prayed an account of the profits made by Keene and Nickels, by making, using, exercising, and vending the said invention and machines, and by manufacturing and vending the articles and things aforesaid; and that they might be restrained from making, using, exercising, and vending the said invention, machines, articles, and things; and in particular from using the said machine in their manufactory. The defendants Keene and Nickels filed the following demurrer:—That the said complainant has not, by his said bill, made such a case as entitles him, in a Court of Equity, to any discovery from these defendants, or any relief against them as to the matters and things contained in the said bill, or any of such matters and things. That the said bill is exhibited against these defendants and divers other persons as defendants thereto, for several and distinct matters, which have no relation to each other, and in parts whereof these defendants are in no way interested or concerned and ought not to be implicated. That all the discovery and relief sought by the said bill is so sought in respect of certain letters patent alleged to have been granted to the said complainant as in the said bill stated. Whereas, it appears from the statement in the said bill of the said letters patent, and of the specification in the said bill alleged to have been enrolled, in compliance with the proviso in that behalf contained in the said letters patent, that the said patent is wholly invalid, and that the same affords no sufficient ground for

Westhead v.

any discovery or relief against these defendants in this Honourable Court; that the said bill contains in itself parties who have no relation to, or dependance on, each other, whereby the said bill is drawn to unnecessary length: and these defendants, if they should be compelled to make answer thereunto, will be put to unnecessary expense, delay, and trouble, contrary to the constant practice of this Honourable Court: that the said bill contains in itself parties who, by the plaintiff's own showing on the face of the said bill, have no interest whatever in the subject-matter of this suit, and are therefore improperly made parties thereto, whereby the said bill is drawn to unnecessary length; and these defendants, if they should be compelled to make answer thereunto, will be put to unnecessary expense, delay, and trouble, contrary to the constant practice of this Honourable Court; and these defendants pray judgment if they should be compelled to make any further or other answer, and to be hence dismissed with their reasonable costs.

Mr. Tinney and *Mr. Dixon*, for the defendants, supported the demurrer, and contended, that the specification contained no invention, and included all modes of cutting; amongst the substances wood might be included, and, if so, the invention was old; that the plaintiff claimed by the bill the benefit of certain drawings, and of a description which, he said, explained his invention, but which he had not set forth; and that the bill was bad, on the ground of misjoinder of defendants: and that the Act of Parliament referred to by the bill required the purchase of the patent by the Company from the plaintiff to be in writing, whereas the bill stated that no contract in writing between the plaintiff and the Company had been entered into.

Mr. Pemberton and *Mr. Havens* supported the bill, and contended, that it was only necessary to show that the patent was for something novel; that the frame of the bill was the same as in the case of *Kay* v. *Marshall*,[*] which did not state the specification fully; that the other defendants, the Company, had an interest, as was alleged by the bill; that no one ever heard of a defendant demurring on the ground of a case not being made against a co-defendant.

---

[*] Ante, p. 117.

Keene et al.

The Master of the Rolls (*Lord Langdale*).—The bill and demurrer are both remarkable: the bill is remarkable for the uncertainty of its statements, and for not setting forth the title of the plaintiffs: and the demurrer is remarkable for its unnecessarily complicated form. I should have thought it was requisite for the plaintiff to have stated his title in the bill, in such a manner as to enable the Court to say, from the statement on the record, whether the title was good or bad. The bill does not do so, inasmuch as it does not set forth on the record the specification, which is necessary to enable any one to consider whether the patent is good or bad; but on looking at the case of *Kay* v. *Marshall*, I find that the Court in that case did not think it necessary that the plaintiff by his bill should set forth a full statement of the specification, but that if the plaintiff alleged by his bill that he had done that which was required of him, the Court would, on demurrer, give credit to the plaintiff's allegation; if that be so, and after the decision of *Kay* v. *Marshall*, whatever my opinion may be on the point, I have on the record before me the same allegation that was found on that case, and also, in addition, certain other words contained in the specification, but not found in *Kay* v. *Marshall*, which we are to construe not of themselves, but with relation to certain other words. The relative words are on the record, but not the correlative words to which they refer. In the absence of the authority of *Kay* v. *Marshall*, I should have thought there ought to have been a full statement of title on the record itself; but that authority decides that these words are to be considered in conjunction with the words to which they relate; and I must decide here, as it was determined in *Kay* v. *Marshall*, that the allegation in the bill is sufficient to sustain the equity of the case, and I do this in submission to the case of *Kay* v. *Marshall*. Previously to the decision of that case, my opinion certainly was that it was the duty of the plaintiff to state his title distinctly on record, and not merely refer to it. The other ground of demurrer is for misjoinder of defendants. The bill prays an account of the profits made in respect of the use of the plaintiff's patent: the allegation in the bill is, that the other parties, defendants, claim an interest in the patent in question; and if so, they must be entitled to a share of such interest

Westhead v. Keene et al.

Curtis et al. v.

as the plaintiff has in calling on the defendants for this account: and this is not a bill for specific performance, but a bill so formed as to obviate the necessity of the defendants, who now demur, being compelled to come to an account twice, first to the plaintiff, and afterwards to the Company; and I think I cannot allow the demurrer on this ground.

The demurrer has, however, a good *primâ facie* face on it; and, under the circumstances, I overrule the demurrer, but without costs. The defendants were not compelled to proceed on the record only; if they have any defence beyond the record, they might plead it, or they might put in a short answer, admitting the facts stated by the bill, but denying the plaintiff's right.

CURTIS AND OTHERS *v.* CUTTS.

In the Court of Chancery, before the Lord Chancellor.—January, 1839.

The bill which was filed by the plaintiffs stated, that J. C. Dyer, in or about the year 1825, discovered and invented certain improvements in machinery for manufacturing or making wire cards for carding wool, cotton, tow, and other fibrous substances of the like nature; and also certain improvements on a machine for shaving and preparing leather used in making such cards as aforesaid; and the said J. C. Dyer applied for and procured to be granted to him letters patent, bearing date the 9th December, 1825, whereby His Majesty King George IV. did grant unto the said J. C. Dyer, his executors, administrators, and assigns, especial licence, that he, the said J. C. Dyer, his executors, administrators, and assigns, and every of them, or such others as he, his executors, administrators, and assigns, should at any time agree with, and no others, during the term of fourteen years, should, and lawfully might, make, use, exercise, and vend his said invention: that in pursuance of a proviso contained in the letters patent, the said J. C. Dyer, by an instrument or specification in writing under his hand and seal, bearing date on or about the 5th of June, 1826, after reciting the

Cutts.

said letters patent, did make, or set forth a particular and exact description of the said last-mentioned invention of him, the said J. C. Dyer, and the manner of making and using the same; and such instrument was, on the 7th June, 1826, duly enrolled in this Honourable Court: that the said J. C. Dyer, after the granting of the said letters patent, and until his retiring from the business of a patent wire card manufacturer in favour of the plaintiffs, used the said improved machinery for making wire cards for carding wool, cotton, tow, and other fibrous substances of a like nature, constructed according to, or after, or upon the plan of the improvements so as aforesaid discovered and invented by him, the said J. C. Dyer; and in particular, such part of the said improved machinery as was and is used for making that kind or description of wire cards aforesaid, called "fillet cards;" and the said J. C. Dyer embarked a large capital in the construction of such improved machinery, and in making wire cards thereby: that in January, 1836, J. C. Dyer retired from the business of a patent wire card manufacturer in favour of the plaintiffs, who purchased from him certain goods and effects, part of his stock, and the goodwill of his business; and J. C. Dyer executed to the plaintiffs a lease for the term of eight years of certain rooms in the mill, situate in Store-street, Manchester, and the use of certain machines, tools, and implements for making wire cards, drawing wire, and for cutting and preparing leather, consisting principally of machines constructed according to the invention, for which the said letters patent were granted, and the plaintiffs afterwards became the purchasers of the last-mentioned machines, tools, and implements, that J. C. Dyer was the first and sole inventor of the improvements, and that on the 24th of March, 1838, J. C. Dyer duly assigned to the plaintiffs the letters patent of the 9th of December, 1825, for the residue of the term of fourteen years; and that the plaintiffs had recently discovered that the defendant had constructed divers machines for making fillet cards upon the principle of the improvements, for which the letters patent, of the 9th of December, 1825, had been granted, and had sold and disposed of some of such machines, and had others in his possession which he intended to sell without the plaintiff's license, which machines, the bill alleged, were infringements of the said letters patent; and it was prayed

Curtis et al. v.

that the defendant might be restrained from making and selling the improved machines, for which the said letters patent were granted, and might account for the improved machines sold by the defendant, and deliver up for the plaintiffs such as were in his possession.

The defendant, by his answer, denied the invention of the improvements by J. C. Dyer, and stated that the specification of the letters patent, of the 9th December, 1825, which had been enrolled, was imperfect and fraudulent: that J. C. Dyer did not discover or invent the improvements, and that the defendant had not pirated or infringed the alleged inventions; that the improvements and inventions were not new or original, and that J. C. Dyer was not the first and sole inventor of the improvements and inventions: that the substance of the alleged improvements consisted of the substitution of an indented wheel or cam for a notched bar of iron, and was by no means an improvement, but only a colourable alteration in the mode of producing the same result as by the old machinery, and introduced merely for the purpose of fraudulently continuing the existence of the letters patent, previously granted to the said J. C. Dyer, and then about to expire: that for some months previous to the taking out the said letters patent, of the 9th December, 1825, machines constructed on the principles for which the said letters patent were so taken out, were used and worked for making fillet cards by Dyer himself; and that in 1810 machines upon the principle of the horizontal notched plate, and similar to those constructed by the defendant, for a person named Walton, had been and then were in use in or near London, and that a patent was taken out in respect of the same at or about that time, which letters patent had expired; that in 1835 the plaintiff Parr made a machine without license under the patent, and informed the defendant, who was then in his employ, that the letters patent of 1825 were invalid, and not worth a straw: that no such machine, as was actually at work as a wire-card making machine, upon the principle professed to be explained, could be made by or from the description contained in the enrolled specification. The answer, however, admitted that the defendant had made and sold card fillet machines, similar in substance to the improved card fillet machines made by the plaintiffs.

An *ex parte* injunction was granted by the Vice-Chan-

Cutts

cellor, in July, 1838, which his Honour declined to dissolve on the coming in of the answer; and the defendant now appealed from that decision.

It was argued, on the part of the defendant, that the bill did not set forth the nature of the infringement complained of with sufficient clearness to show the Court whether any infringement had, in fact, taken place; nor did it show in what the improvements consisted, so that the Court could, in fact, form no opinion.

On the part of the plaintiffs it was contended, that the long possession of the patent in question was sufficient reason for the injunction; that though the bill did not particularize the acts done by the defendant so as to shew in what the infringement complained of consisted, still the answer admitted the making of machines in substance the same as those described under J. C. Dyer's patent.

The Lord Chancellor.—The bill does not state such a case as to justify the granting of an injunction; but the answer does state that which, if stated in the bill, would have entitled the plaintiffs to an injunction as regards their title. There are, however, other statements contained in the answer, which throw doubt on the right of the plaintiffs to the injunction prayed by them; the answer disputes the validity of the letters patent, and states that the alleged invention is not new, and that the specification is imperfectly set forth. On the other hand, the plaintiffs contend that there has been a long possession and enjoyment under the letters patent of 1825. This Court gives credit, no doubt, to long enjoyment under the letters patent, until it is proved that they are bad; but then there must be not only enjoyment, but exclusive enjoyment, under them. (*Hill* v. *Thompson et al.**) The question is, whether in this answer such a case is admitted. The answer states that the plaintiff Parr, when not interested in the letters patent, had made an engine, or a machine, upon the principle claimed by the letters patent, and insists that the letters patent are not new; the defendant shews, that, by the exercise by the plaintiff Parr, when not interested in the letters patent, of the right to make the machines, and by the defendant since, is inconsistent with the exclusive right of the plaintiffs, and not only negatives exclusive enjoyment by Dyer and

---

* Vol. i., p. 369.

Curtis et al. v. Cutts

Westhead v.

the plaintiffs, but shews that the title of the plaintiffs was disputed by the very party who now sets up the exclusive enjoyment. If the difficulty had been only the generality of the statement in the bill, I should have supported the letters patent, but the allegations in the answer negative the exclusive enjoyment claimed by the plaintiffs. I think the right course is, not to restrain the defendant, but to give the plaintiffs the opportunity of trying the question at law; and they can make another application to the Court on a different case if they choose, for there is no doubt, from the admissions in the answer, that the defendant has made machines upon the principle comprised in the letters patent. The injunction must be dissolved, with liberty for the plaintiffs to bring an action. The order of the *Vice-Chancellor* to be discharged, and the costs of the proceedings before his Honour, as also the present costs, must be costs in the cause.

WESTHEAD *v.* KEENE AND OTHERS.

In the Court of Chancery, before the Master of the Rolls (Lord Langdale), 12*th June,* 1839.

Mr. Pemberton.—In this cause, in which Joshua Procter Westhead is the plaintiff, and Charles Keene, Christopher Nickels, and the London Caoutchouc Company, are the defendants, I am humbly to move your Lordship, that the defendants Charles Keene and Christopher Nickels may be restrained by the order and injunction of this Honourable Court, from making or using an invention described in the plaintiff's patent. My Lord, this is a case which has been before your Lordship upon demurrer some time ago;* your Lordship overruled the demurrer, and we have now got the matter before the Court for an injunction, which is supported by affidavits. The plaintiff is Joshua Procter Westhead; and the defendants are Charles Keene and Christopher Nickels, the parties against whom the injunction is sought, and the London Caoutchouc Company, who contracted with the plaintiff for the purchase of the invention; and who are, of course, materially

---

* Ante, page 425.

Keene et al.

interested in the question before the Court. My Lord, the bill states that on the 16th of February, 1836, the plaintiff, Joshua Procter Westhead, obtained letters patent for an improved method of cutting caoutchouc, or India-rubber, leather, hides, and similar substances, so as to render them applicable to various useful purposes.* My

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.,—Now know ye, that in compliance with the said proviso, I, the said Joshua Procter Westhead, do hereby declare the nature of my said invention, and the manner in which the same may be performed and carried into effect, by reference being had to the annexed drawings, and the following description thereof. The scale to which the drawings are made is marked thereon, and similar figures and letters of reference are used to indicate similar parts throughout the whole of the drawings. The annexed drawing represents one arrangement of machinery or apparatus, by which my improved method of cutting is carried into effect.

" Fig. 1, represents an end, and,

" Fig. 2, a front view of the machine, in which, A, is a driving-shaft, which receives motion by hand from the crank-handle, A, or from other power, as circumstances may require. This motion can either be imparted or arrested, at the pleasure of the operative or person attending the machine. B, represents the fly-wheel, for the purpose of equalizing the rotation of the shaft, A, and C, a pulley keyed on the shaft, and carrying the strap, D. Immediately above the pulley, C, and parallel to the shaft, A, is placed the shaft, E, supported by two hangers, *d*, *d*, and revolving freely on its axis. On this shaft are placed the pulleys, *e* and e^1, the former receiving motion from the strap, D, and the latter imparting motion to the strap, F, which passes round the pulley, *f*, placed firmly on the small shaft, f^1, f^1, carrying the two small circular discs or cutters, *g*, *g*, which are revolved (in the direction of the arrows) at an increased velocity due to the relative circumferences of the various pulleys, C, *e*, e^1, and *f*. By reference to the driving-shaft, A, at the opposite extremity to that at which the power is imparted, it will be seen that a small bevel-wheel, *a*, is placed thereon, gearing into a similar bevel, a^1, or a^2, placed on a transverse shaft, *b*, *b*, as best seen at fig. 1. This shaft, *b*, *b*, is allowed to move endwise in the journals or supports in which it is supported, so that either the bevel, a^1, or a^2, can be put in gear with the driving-bevel, *a*, and thereby the direction of rotation of the shaft, *b*, *b*, may be reversed at pleasure. When either of the bevels, a^1, or a^2, are put in gear with the bevel, *a*, it is kept so by means of a small catch, b^1, which falls into a groove cut into the shaft, *b*, *b*, and prevents any end traverse, or movement of the shaft, until removed by the operator for the purpose of reversing the rotation. From the shaft, *b*, *b*, motion is conveyed by means of the pulley, G, and the strap, G^1, to the pulley, H, which is supported on a shaft by hangers, *h*, *h*, similar to the shaft, E, already described. This shaft is also provided with a small drum, or barrel, I, as seen at fig. 2, which imparts motion at a reduced speed to the strap, *i*, and thence to the pulley, K, placed at one end of the shaft, *m*, *m*, *m*, as seen at fig. 2. At the opposite end of the shaft, *m*, *m*,

Westhead v.

Lord, I believe I had better state generally what is the nature of the invention. The object of the invention is,

---

(which is supported in the sliding carriage, *n*, *n*, *n*, *n*,) is placed a spur-wheel, gearing into a similar wheel placed on the extremity of a screw passing the whole length beneath the carriage, *n*, *n*, *n*, *n*, and taking into a stationary nut attached to the part, n^1, n^1, similar to the arrangement for traversing the slide rest in lathes of the ordinary construction, the direction of traverse or end motion of the carriage, *n*, *n*, *n*, *n*, necessarily depending on the direction of rotation of the pulley, K. *o*, *o*, are two supports attached to the carriage, *n*, *n*, *n*, *n*, and provided with small shafts, *r*, and r^1, which receive a slow revolving motion from the bevels, o^1, and o^2, the former of which is placed on the shafts, *m*, *m*. P, P, represent two stationary shields, or rests, suppported from the part, n^1, n^1, each provided with an horizontal slot or opening to allow of the alternate traverse of the small shafts, *r*, and r^1, as well as a perpendicular cut, or opening, through which the lower extremity of the cutter, *g*, is caused to revolve, as seen at fig. 2. By tracing the motion of this machine, it will be seen that the cutters, *g*, *g*, are receiving a quick rotation, at the same time that the shafts, *r*, and r^1, are receiving a slow rotation, as well as a slow end traverse or progressive motion, dependant on the screw motion which governs the traverse of the carriage, *n*, *n*, *n*, *n*. Supposing, therefore, a flat disc or piece of caoutchouc, leather, hide, or other similar substance, to be secured in the position represented at S, by means of washers and screw-nuts, or other convenient apparatus, it will partake of the motion of the shaft, *r*, on which it is placed, and gradually revolve and keep in contact with the cutter, *g*, regularly approaching the same by the traverse of the carriage, *n*, *n*, *n*, *n*, in the direction of the arrow, n^6, and thereby cut the material, S, into fillet or tape, *t*, *t*, *t*, till the whole is disposed of. The utility of the rests or shields, *p*, *p*, will now be obvious in supporting the material to be cut when subjected to the action of the cutter, *g*, which has a constant tendency to press it against the surface of the rest, *p*. In operating with this machine it will be remarked that while the shaft, *r*, which carries the material, S, is approaching the cutter, *g*, the corresponding shaft, r^1, is receding from the cutter to which it belongs, so that when the piece S, is finished, and the shaft, *r*, which supported it, is near to the cutter, *g*, the corresponding shaft, r^1, is at the greatest distance from its cutter. In this position the machine is stopped by the operative or attendant, and the disc, or flat piece of caoutchouc or other material placed on the shaft, r^1, the catch, b^1, elevated and the shaft, *b*, *b*, removed endwise in the direction of the arrow, b^6, fig. 1, so as to relieve the bevel, a^1, and bring the bevel, a^2, into gear with the driving-bevel, *a*, and thereby reverse the direction of rotation of the pulley, K, and consequently the traverse of the carriage, *n*, *n*, *n*, *n*. The machine being again put in motion, the cutting proceeds on the one shaft, r^1, while the opposite shaft, *r*, recedes from the cutter, *g*, preparatory to receiving a fresh piece of material as soon as that under operation shall be finished; and the machine again stopped as before; thus the shafts, *r*, and r^1, are alternately loaded, and the material cut from a flat disc into a continuous fillet or riband. Now although the machine which I have above described answers the intended purpose of enabling me to carry into effect my improved

Keene et al.

for an improved method of cutting caoutchouc, which may be cut into a sort of riband, which is done in a peculiar method; a method wholly unknown to be applied to the purpose until the present invention. The old method of cutting it, was by having it in bottles, and then it was cut in a spiral form in the ordinary mode, which answered the purpose; but solid or irregular pieces of India-rubber could not be cut in that mode. The invention of the plaintiff has been used by the defendants for the refuse India-rubber; which they now press down and consolidate into a disc, and by means of a machine it is cut into bands or fillets; the consequence of which is, that they may be cut from that sort of India-rubber, which before was merely refuse and wholly worthless. My Lord, the defendants put in a demurrer, and upon the demurrer coming on, it was

method of cutting caoutchouc, or India-rubber, leather, hides, and similar substances, so as to render them applicable to various useful purposes, I am fully aware that the same may be variously modified; as for instance, instead of imparting a rectilinear or progressive movement, as well as a rotary motion to a piece of caoutchouc, or India-rubber, leather, hide, or similar substance intended to be cut into fillets, a revolving motion only may be imparted, and by causing the pedestal or bearings upon which the revolving cutters work, to be fixed upon or attached to a sliding carriage, and made to advance in the direction of the material to be operated upon, a similar effect may be produced, and the caoutchouc, leather, hide, or similar substance, be cut into fillets or tapes of the required thickness. It is also obvious that instead of using revolving or circular cutters, longitudinal or straight knives or cutters may be applied, to which rapid reciprocating motion may be given for the purpose of cutting the caoutchouc, hides, and similar substances, into fillets. The position of the various motions and parts of the machinery for the accomplishment of my method of cutting such materials, may also be considerably varied if required, and rendered more completely self-acting or independent of the operative or attendant. But as one great advantage arising from the adoption of my improved method is that of cutting pieces of material of irregular shape and size, the adjustments of which must always depend on the judgment of the operative, I have considered it best to leave the machine also greatly dependant on his or her attention. I therefore wish it to be understood, that I claim as my invention not only the machine hereinbefore described, but also any modification of such machine by which my improved method of cutting caoutchouc or India-rubber, hides, and similar substances, into a band, tape, or fillet, by means of a revolving or other cutter, acting on the exterior edge of such materials, and regularly cutting the same in a spiral or helical direction towards the centre, can or may be effected. And such my invention being new, and never before effected by machinery, I do hereby declare this to be my true and faithful specification of the same.—In witness whereof, &c.

"JOSHUA PROCTER WESTHEAD."

Westhead v.

argued that the patent was invalid upon the face of it. It was said the description of a patent for an improved method of cutting caoutchouc, or other similar substances, so as to render them applicable for various useful purposes, was an improper description, and the specification did not remove the difficulty which was supposed to exist from the too great distension of the patent; your Lordship was of opinion it was impossible to decide that it was not right, and your Lordship overruled the demurrer, and the parties are proceeding now upon the affidavits. My Lord, my objections are partly objections of law, and partly objections of fact; and I apprehend, probably your Lordship will be of opinion that all that can be done at present, will be to direct an action to be brought. I do not imagine that the Court will dispose of it without an action, but we hope, in the meantime, an injunction will be granted; and these parties, it appears, ought not to be permitted to go on using this invention in the meantime. If your Lordship should say it is not a cause in which, considering the delay which has taken place, the Court ought to interfere by way of injunction; perhaps your Lordship will put the parties upon terms. My Lord, the first affidavit filed in support of the motion, was an affidavit filed on the 6th of December 1838; it is the affidavit of Mr. Westhead himself, and he states that letters patent were granted to the effect I have stated to your Lordship, that he duly enrolled the specification within the six months, and that the specification is in the form mentioned. Perhaps your Lordship will allow me to hand up this drawing to your Lordship, and you will then see the specification. Now, my Lord, as your Lordship sees in fig. 2, S, is the disc of the India-rubber; then there is above a red line, G, which is the circular cutting-knife; the principle of the machine is, that, when this winch, or whatever it is called, at the end the machine is turned, the knife revolves, and then the India-rubber is gradually approximated to the knife which cuts the India-rubber, as the India-rubber turns round. There is a lateral motion which keeps it up to the knife, and the knife itself turns, which cuts the India-rubber.

Mr. Tinney (for the defendants).—The India-rubber revolving assists the cutting.

Mr. Pemberton.—It keeps it up to the knife; there are three motions by which this solid piece is cut.

Keene et al.

The Master of the Rolls.—*Mr. Tinney*, you say the patent is clearly bad; there ought to be no intervention at all, and, therefore, you decline keeping an account?

Mr. Tinney.—Oh yes, my Lord, we don't use this invention.

Mr. Pemberton.—If they do not, we shall fail at law. My Lord, that is the question which will have to be tried at law. And then, my Lord, Mr. Westhead, in his affidavit, says, "that in the latter part of the month of July, or the beginning of the month of August, 1838, he was, for the first time, informed by Robert William Siever, of Henrietta-street, Cavendish-square, that the defendants, Charles Keene and Christopher Nickels, were infringing his patent rights; until which time he did not know that the defendants or either of them were infringing his patent rights, and deponent believes, that, by such infringement, the defendants have made considerable profits, to the manifest and serious injury of the deponent." Then, my Lord, there is the affidavit of Edward Woodcock, a mechanist, who was formerly in the employ of the defendants, Messrs. Keene and Nickels; and he says, he has for the last twelve years been engaged in mechanical pursuits, and is well acquainted with the science or business of a mechanist. That after the grant of the letters patent, and in March, 1836, deponent, with the assistance of one Benjamin Nickels (a brother to the defendant, Christopher Nickels), manufactured, or assisted in manufacturing, by order of Charles Keene and Christopher Nickels, for the use of the firm, a machine, varying in some immaterial particulars and details, but otherwise precisely the same in principle, construction, mode of use, and operation, as the machine invented and constructed by the plaintiff, Westhead. Now, my Lord, I believe the only difference between the two is the mode in which the disc is placed: in the one case it is horizontal, and in the other it is vertical; it is precisely the same in every other respect, the motion is the same; the lateral motion is the same, and the rotatory motion is the same; the only difference is, that the one is laid flat and the other round. Our letters patent were in February; and after this is done the first thing is, that in March it is intimated in the manner I have described to your Lordship. Now, these affidavits were filed in support of the motion origi-

Westhead v.

nally; and instead of meeting the motion on those affidavits (which, to be sure, might have been done at once in a more satisfactory manner, if they say they have not infringed the patent) they filed a demurrer to the bill while the notice of motion was pending.

Mr. Tinney.—No, you are under a mistake; the notice of motion was given on the 8th of December, and the demurrer was argued on the 3d of December.

The Master of the Rolls.—The notice of motion is dated the 7th of December.

Mr. Tinney.—Yes, my Lord, and the demurrer was argued and overruled on the 3d.

Mr. Pemberton.—The notice of motion was served on the 8th. It does not in the least degree affect the propriety of the proceedings. Why file a demurrer to the bill to put us to all the expense of the demurrer, and to put the Court to the trouble of being occupied a day and a half on a long discussion on the merits of the invention—if the gentlemen are really justified in saying what they now say, that they had not for nine months before used our invention? *Mr. Tinney* says they are not to keep an account, because they do not use our invention: it is the shortest possible answer to it;—why file a demurrer? Instead of taking the course of meeting it upon the affidavits, they demurred; they put us to the expense of arguing the demurrer, and afterwards (the demurrer being overruled) they filed affidavits in answer to our application; and the first affidavit which I have got is the affidavit of Mr. Christopher Nickels, the defendant; and, my Lord, no doubt Mr. Nickels, the defendant, in many respects contradicts the affidavit of Woodcock, and the question is, whether that is not a matter which must be tried at law. The defendant, Nickels, cannot be examined, but Woodcock will be put into the box, and will be examined and cross-examined, no doubt, very strongly; but to say that Mr. Nickels is to avail himself of his own evidence in a Court of Equity, when he could not do so in a Court of Law, is going rather too far. He says, "he hath perused the affidavit of Woodcock sworn on the 20th of November, and he says he never was employed in the elastic department of the business," (what is meant by that, I do not know;) "but only in the grinding and re-composing of India-rubber in blocks for the use of stationers, and for sheet India-rubber, and other purposes."

Keene et al.

The affidavit then refers to a French publication, which is said to contain the description of a similar invention, and that copies have been obtained by him, and by other persons in this country in the course of the years 1834 and 1835. The effect of this affidavit is to say, as I understand it, that the description in the French work, published in the year 1834, contains an account of an invention similar to that for which the plaintiff has obtained his patent. The defendant then says, "that on deponent's reading the printed copy of plaintiff's specification, he was unable to make out what the distinction, novelty, or improvement was, sought to be protected by the patent, inasmuch as it set forth no other species of machinery than had been used in separate parts, or with some immaterial modification by deponent and others in the manufactory for cutting India-rubber only, and not leather hides, or other similar substances. That it hath been the habit of this deponent and his partner to keep a large stock of raw material, or unmanufactured India-rubber, in their factory, ready for consumption; and that, in point of fact, at the last-mentioned period, they had an average stock thereof for two years' consumption; and that at the present time they have, to the best of deponent's belief, a stock of India-rubber enough for four years' consumption." My Lord, this is the drawing of the machine used by the defendants.

The Master of the Rolls.—This is an old machine.

Mr. Pemberton.—It is what they call an old machine; that is the question to be tried.

Mr. Tinney.—It is the machine they have always used until they found out the other.

Mr. Pemberton.—The question is as to the truth of this; here is their statement; here is the man who lived in the factory—Benjamin Nickels, who positively swears, as your Lordship has heard: he says this has been "from time whereof the memory of man is not to the contrary."

The Master of the Rolls.—That is rather a long time for him to swear to.

Mr. Pemberton.—He says, "he believes the same method has been applied from time immemorial by shoemakers and leather-cutters to the cutting of boot-laces and leather thongs, and by other manufacturers."

Westhead

The Master of the Rolls.—The principle, I think, has been applied a very long time in that way. I suppose every boy who has been at school recollects that he might cut a piece of leather in the form of half-a-crown, and then cut it out afterwards in threads or strips, by cutting round the circumference.

Mr. Kindersley.—You cannot do that with India-rubber, my Lord.

The Master of the Rolls.—Are the drawings here which are described as being in the French work brought over in November, 1834?

Mr. Morris.—Yes, my Lord.

The Master of the Rolls.—Let me see one of them. (The book was handed to his Lordship.)

Mr. Tinney.—We have a verified explanation, my Lord, of the technical words in that book.

The Master of the Rolls.—It appears the very same thing: the plan of the machine is, to cut the disc of caoutchouc; here are the two things revolving.

Mr. Pemberton.—I believe, my Lord, there is a good deal of resemblance of the invention described in that book and ours: but it never was in use here. Doctor Ure says he saw that book, and that it is not a publication of the invention in this country which would prevent persons obtaining a patent for it. I have not seen it, and therefore cannot tell what it is.

The Master of the Rolls.—In figure 2, you will see sufficient' to explain how it is; there is a slight variation in the form of putting it.

Mr. Pemberton.—My Lord, the defendant says he had in constant use in their said factory a machine similar to that described in the work, which your Lordship has seen, which description was taken from the factory of Rattier and Guiball, in Paris. And then, my Lord, he refers to another work, I believe another French work, entitled, "Dictionnaire de l'Industrie Manufacture Commerciale et Agricole."

Mr. Tinney.—It is another description of the same, my Lord.

Mr. Pemberton.—"That the said last-mentioned work contains a description of a process and machine for cutting India-rubber from flat discs into bands or fillets, upon precisely the same principle as the machinery and

Keene et al.

process used in this country." Here, again, my Lord, I repeat, supposing this to be true, I cannot understand on what principle it is these parties have taken the course which they have taken here; they say we have long since abandoned it; at all events, they put us to the arguing the demurrer, and answering the affidavits, and bringing it before your Lordship in the way in which it stands. Then, my Lord, there is an affidavit of Mr. Keene, the defendant, which is not of any consequence. He says he resides in Sussex-place, Regent's-park. That he never gave any order to Edward Woodcock; nor to his knowledge and belief did his partner, Nickels, ever give any order to Woodcock, to construct a machine for the purpose of cutting India-rubber into tapes or fillets upon the principle of the plaintiff's patent invention. He says he has read the affidavit of Christopher Nickels, and he believes it to be true. Then there is the affidavit of Doctor Andrew Ure, principally, as it appears to me, giving his opinion upon the matter of law, and upon the validity of the specification. It seems to me that Dr. Ure had either read Mr. Tinney's speech, or Mr. Tinney had read Dr. Ure's affidavit. The principal part of his affidavit goes to shew, I believe, that India-rubber is an elastic substance, and that the machine is for cutting India-rubber, leather, hides, and similar substances, into tapes and fillets, and so on.

Mr. Tinney.—Or cork.

Mr. Pemberton.—He is of opinion that the specification is invalid; that is a matter which I presume is either for your Lordship, or rather for a Court of law, to determine.

The Master of the Rolls.—Will you undertake to bring an action?

Mr. Pemberton.—Yes, my Lord, we will undertake to do so.

The Master of the Rolls.—If you undertake to bring an action, I think I ought to let this motion stand over till you have brought your action, and I know the result of that action, with liberty to the other side to apply at any time.

Mr. Tinney.—I think, my Lord, I can shew your Lordship that there is no pretence whatever for this.

The Master of the Rolls.—It will not prejudice you, *Mr. Tinney,* in any way; they undertake to bring an action, whatever is done with this motion.

Westhead v.

Mr. Pemberton.—We shall bring an action undoubtedly.

The Master of the Rolls.—Upon the evidence, as I see it now before me, I think I ought not now to interfere until the action is brought. I say nothing about the injunction; if they undertake to bring an action, I shall do no harm to anybody, if I let this motion stand over until the action is tried.

Mr. Tinney.—Your Lordship is acting upon the supposition of our infringing the invention; we are doing nothing of the kind.

The Master of the Rolls.—They are going to bring an action, *Mr. Tinney.*

Mr. Tinney.—Your Lordship sees that this gentleman has sold to the Caoutchouc Company what he considers to be the patent invention; and, therefore, he is endeavouring to support the engagement he has entered into with the Caoutchouc Company; and as long as he can give any colour to the existence of this, he will do it.

The Master of the Rolls.—If he does not bring any action you can apply. Whatever my opinion might be, it will not save you from action.

Mr. Tinney.—No, my Lord, certainly, but it will be a considerable satisfaction to us to have the present motion dismissed, and the injunction refused.

The Master of the Rolls.—I do not intend to grant the injunction.

Mr. Tinney.—I assure your Lordship we think that we are annoyed, and that we are entitled to have this motion refused with costs. It is a motion brought on in June, 1839, on a pretended infringement which they themselves acknowledge they discovered in July or August last, they do not know which, and it is not until June, 1839, that they bring forward this motion, being very likely pressed by the Caoutchouc Company. They renewed their notice of motion; they gave a notice on the 6th of December, and never did anything under it, and on the 31st of May, they gave notice that they mean to bring forward the motion again.

The Master of the Rolls.—The result of which is that I cannot grant the injunction.

Mr. Tinney.—I submit to your Lordship, that we are entitled to the costs of this motion. Your Lordship will recollect our demurrer was said to be vexatious, they hav-

Keene et al.

ing declined to insert the specification in the bill, your Lordship did not know that they had not a good patent. Your Lordship pronounced judgment with a strong intimation of your opinion, that, but for *Kay and Marshall*, your Lordship would have allowed it without costs. Our answer was put in on the 12th January.

The Master of the Rolls.—Your answer has been put in ?

Mr. Tinney.—Oh yes, my Lord, our answer was put in on the 12th of January last.

The Master of the Rolls.—I will hear this then—go on; *Mr. Pemberton*, I think, has not done yet.

Mr. Toriano.—If your Lordship will allow me, I will state how it is; it is hardly fair that this objection should be made now. On the last motion day, *Mr. Dixon* and myself agreed to this minute, "*Westhead* v. *Keene*, to remain in its present state; no further affidavits to be made on either side; to be brought on the last day of this term, if practicable. *Cornish and Keene* (which is another motion in which the same parties are engaged) to stand over until the first seal after the term." This was the arrangement between my friend, *Mr. Dixon*, and myself; I apprehend it is rather too late now to take this sort of objection; besides which they have filed two affidavits, one on the 4th of June——

The Master of the Rolls.—I don't wish to have any more of this; I have said I will hear the rest of this motion; I am quite sure it will be a waste of time, but still——

Mr. Pemberton.—I do not think I can carry the case further, my Lord; I put it upon this, we have filed affidavits in answer. Mr. Woodcock re-asserts positively what he has before sworn, and we have the affidavit of Mr. Farey, a gentleman of great intelligence and knowledge on scientific subjects, and whose affidavit at least is a full counterbalance to Dr. Andrew Ure's, who goes through the whole of the matter, and who states his opinion of the importance of the invention, and who answers the objections, as far as one scientific gentleman can dispose of the opinions of another scientific gentleman; with respect to the validity of the specification, it is not a matter for either of them to deal with. He states, as to the objections which have been made by these parties, that they cannot tell what the particular object of the invention is; he states, that he has no difficulty whatever,

Westhead v.

and with respect to the notion of this being an invention for the purpose of cutting ivory and glass, and other things of that nature, it is quite absurd. The invention is an invention for cutting India-rubber, and other similar substances, which can be cut into bands and tapes, and fillets, and not for cutting ivory and glass. My Lord, Mr. Farey then states various other objections which have been taken by Dr. Ure; he disposes of them in a manner which I believe your Lordship will think is entirely satisfactory. Those objections, which are objections in point of law, are matters which have to be tried at law. The first is a point of fact in the affidavit of Mr. Woodcock, and against that there is the affidavit of Mr. Nickels, the defendant, and Mr. Benjamin Nickels, his brother, and it will be for a jury to decide between them on that fact. As to the defendant Nickels, of course he cannot be examined, but it will be for the jury to decide between the two parties, upon the evidence which will be adduced, whether the infringement which has been alleged, has, or has not been committed, and upon that the jury will come to a decision, if necessary; a Court of Law is more competent to dispose of these matters than a Court of Equity on the legal validity of the specification and patent, and if we find that the patent is invalid, what is the consequence? Why, our bill will be dismissed with costs, and the present motion will also be dismissed with costs. Suppose we succeed, and this is dismissed now, we shall be in the position of having had our motion refused, and with costs; and it will be on evidence, which, after the trial, may turn out to be wholly false. Where is the justice, I would ask, in such a mode of proceeding? Therefore, I take nothing more than in any case we may be entitled to, and I submit to those terms which have been suggested, at least by the Court, that the motion stand over, we undertaking to bring an action; if we do not bring the action, then this motion will be dismissed with costs, and if we do bring the action, we must abide by that action, whether we succeed or not.

Mr. Toriano.—My Lord, I am with *Mr. Pemberton*, and, in consequence of the affidavits of Messrs. Nickels and Keene, Mr. Woodcock has filed another affidavit, in which he reiterates the assertions in his first affidavit, and also exposes the fallacy of some parts of the affidavits of Messrs. Nickels and Keene.

Keene et al.

Mr. Kindersley.—I appear, my Lord, for the Caoutchouc Company, who are made defendants, and who are interested in this; but the question being merely reduced now to the validity or invalidity of the patent, I do not think it right to trouble your Lordship with any observations.

Mr. Tinney.—I appear, my Lord, on behalf of the defendants, against whom the injunction is sought; and I assure your Lordship I feel great unwillingness in giving the Court trouble unnecessarily, but I cannot help thinking that the Court will be saved a great deal of trouble by disposing now of this motion.

The Master of the Rolls.—You are of opinion, *Mr. Tinney*, and therefore argue, that, when it is a mere legal question, which it is, as to the validity of the patent, and the plaintiff undertakes to bring an action, which is to be decided at law, that I ought to make an order, which is to be determined here first.

Mr. Tinney.—I thought the Court of Equity would not entertain any jurisdiction to prevent a person having his legal rights; but if there is anything which in the least degree inconveniences or prejudices the other party, you have a right to shew that he has not made out either a *primâ facie* case as to his legal right, or, if he had made out a *primâ facie* case as to his legal right on the face of his patent, still we have a right to shew that the case is entirely disproved, because the invention is not new, and that his own conduct has been such, that he ought not to call upon the Court to give him the least degree of assistance, or to do anything which will prejudice the defendants. I believe I am prepared to shew, my Lord, first of all, that there is not a *primâ facie* case; and, secondly, that there is not the least case as to the invention being new; it was an old invention, and, therefore, there is no case; and, in the third place, I think your Lordship will see that the conduct of the party has been such as not to entitle him to call upon the Court for any relief at all by way of injunction.

The Master of the Rolls.—You need not trouble yourself upon that, because, on the statements which have been made to me, and the evidence which has been read, I should not think fit to grant the injunction; neither do I think fit to put you to the inconvenience of an account; and further, if they did not undertake to bring the action, I should have refused the motion, with costs, in the way

Westhead

it stands; but if they do undertake to bring an action, the question is, whether I am to prejudice that action by dismissing this motion. If they do not bring the action, you will apply for the costs of the motion, and the costs of the suit, and everything else; if they do bring the action, as they undertake to do, it will be determined at law. When can an action be brought? It ought to be done without delay.

Mr. Pemberton.—We will bring it forthwith, at the sittings after this term.

Mr. Tinney.—Your Lordship sees under what circumstances they are coming here. This party says he knew of the infringement some time in July or August, he does not know which, and he does not pretend to say, not from Mr. Woodcock, but from a Mr. Sievier, whom he does not attempt to bring forward with any affidavit whatever; he then makes excuses, and says not in July or August, but towards the end of September he went to Paris, and that was the reason he could not file his bill till November. He then files his bill in so imperfect a form, that nobody could make out what was meant. There are certain affidavits filed, and we have replied by affidavits, and put in our answer on the 12th of January—the matter there rests,—he does not attempt to ask for an injunction—he waits until the 31st of May; and on the 31st of May he files affidavits which have been sworn in March, and gives us notice that at the next seal he shall move for this matter. We have used the greatest possible expedition; we have put in two affidavits to meet it. I do not know whether, after that, your Lordship would think that this motion ought to be refused?

The Master of the Rolls.—I say I do not dismiss this motion with costs when the party undertakes to try it at law; I give him no countenance at all, not the least.

Mr. Dixon.—I was merely going to say, my Lord, your Lordship would not prejudice an action by now disposing of this motion. We are apprehensive that your Lordship entertaining this motion, even to the extent to which your Lordship has done, it might be thought that the plaintiff had some ground for coming here.

The Master of the Rolls.—Really, *Mr. Dixon*, people are not so silly in this world as you suppose they are. I have given no opinion one way or the other, except this, that, having heard and read what I have, I have refused

Keene et al.

Bickford et al. v. Skewes.

to grant the injunction, and I refuse to put you to the terms of paying the costs, and I refuse to put you to keep an account, and not putting you upon terms is certainly in your favour, and not against you.

Mr. Tinney.—Of course, my Lord, we should ask for liberty to move for a *scire facias.*

The Master of the Rolls.—You are under no sort of restraint. They undertake to bring the action forthwith. I cannot say how soon they will be at liberty to do so, if they can do it immediately. I put them upon terms of doing it.

Mr. Tinney.—I am afraid the action cannot be tried until after November.

The Master of the Rolls.—You are under no prejudice whatever.

Mr. Tinney.—The plaintiff undertaking to bring the action forthwith.

The Master of the Rolls.—The plaintiff undertaking to bring the action forthwith, let this motion stand over until the action is brought, with liberty for you to apply, if there should be any delay.

Mr. Dixon.—The defendants themselves to be the actors in any *scire facias.*

Mr. Tinney.—We are fully at liberty to propose that.

The Master of the Rolls.—I cannot help thinking of the apprehension you entertain that you may be prejudiced.

BICKFORD AND OTHERS *v.* SKEWES.

In the Court of Chancery, before the Vice-Chancellor (Sir L. Shadwell).
December 10, 1838.

THE plaintiffs in this case filed a bill to restrain the defendant from infringing a patent granted to William Bickford on the 6th day of September, 1831, for "An instrument for igniting gunpowder when used in the operation of blasting rocks and in mining, called 'The Miners' Safety Fuze,'"* and an injunction was granted

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—Now know ye, the instrument invented by me for igniting gunpowder when used in the operation of blasting of rocks and in mining, which I call 'The

Bickford et al.

by the Lord Chancellor until the answer or further order, with liberty to apply. On the coming in of the answer the defendant applied to have the injunction dissolved. The answer denied that the said invention was made by the said William Bickford; on the contrary, that Mr. Bickford gave an Irishman, whose name was unknown, twenty shillings to teach him the mode of making such fuzees. It was contended on behalf of the defendant that this could not be considered a case of long enjoyment, because very few persons were interested in such a grant as this. It was not like a steam-engine, or many other manufactures, which would be the subject of general application in all parts of England; in fact, one manufactory in this case was sufficient to supply the whole of this country. The bill and specification leave it in doubt whether the fuze or the machinery for making it was the object of the patent, and the affidavits showed what the patentee had received was not the invention, but received from another person, who had exposed the invention publicly before the patent. The injunction ought, therefore, to be dissolved. The defendant said

---

Miners' Safety Fuze,' I manufacture by the aid of machinery, and otherwise, of flax, hemp, or cotton, or any other suitable material, spun, twisted, and countered, and otherwise treated in the manner of twine spinning and cord making, and by the several operations hereinafter, and in and by the drawings hereunto annexed, mentioned, and described. By means whereof I embrace in the centre of my fuze, in a continuous line throughout its whole length, a small portion or compressed cylinder or rod of gunpowder, or other proper combustible matter prepared in the usual pyrotechnical manner of firework for the discharging of ordnance, and which fuze, so prepared, I afterwards more effectually secure and defend by covering of strong twine made of similar material, and wound thereon at nearly right angles to the former twist by the operation which I call countering, hereinafter described; and I then immerse them in a bath of heated varnish, and add to them afterwards a coat of whiting, bran, or other suitable powdery substance, to prevent them from sticking together, or to the fingers of those who handle them. And I hereby also defend them from wet or moisture, or other deterioration, and I cut off the same fuze in such lengths as occasion may require for use. Each of these lengths constituting, when so cut off, a fuze for blasting rocks and mining, and I use them either under water or on land in quarries of stones and mines, for detaching portions of rocks or stone or mine, as occasions require, in the manner long practised by and well known to miners and blasters of rocks. Having thus particularly described and ascertained the nature of my said invention, I now proceed to show in what manner and by what apparatus the same is to be performed.—(The specification then proceeds to describe the mechanical apparatus and process.)—In witness whereof, &c.

"WILLIAM BICKFORD."

there was no novelty, therefore there ought to be no injunction. If it turned out so at the trial, then a great injury would be done to the defendant by the continuance of the injunction. This objection went to show that there ought to have been no grant. The Court would protect a patent which it thought was already good, and even in doubtful cases with long enjoyment, but not in a case where the invention was denied.

The Vice-Chancellor said, supposing the specification clearly bad, is not the patent then in the same situation as in the cases put? Is not the principle this, that the Court sets the fact of the enjoyment against the legal objection, either of the badness of the specification or the fact of the patentee not being the inventor?

It was then contended that the bill was not framed on the principle of long possession, and even if it had been, then the enjoyment was but six years, and certainly the general facts did not bring it within the authority of the cases where injunctions had been granted, where some doubts might be held as to the validity of the patent.

The Vice-Chancellor said, in the case of *Kay* v. *Marshall*,* I certainly could not think it right in the first instance to allow the demurrer, but it struck me that sooner or later the question must be determined, and therefore, without allowing the demurrer, I directed that course of proceeding to be adopted which would have the effect of determining the question at law; for determined at law it was plain the question must be. But in that case I thought myself bound to oppose length of time, during which there had been the enjoyment of the patent, against any conclusion merely of law, which I myself might be inclined to draw from the specification, which in some measure appeared to me to be defective; and the Lord Chancellor, as far as the question was concerned, whether the demurrer should be allowed or not, entirely agreed with me, namely, that, whatever may be the objection to the specification, this Court is bound to look to the fact, that there has been an enjoyment under the patent, as a sort of practical answer to the theoretical objection. My order went to direct, that there should be a trial immediately, before I gave a final opinion. Upon the argument of the demurrer, the Lord Chancellor

---

* *Ante*, page 117.

Bickford et al.

said, that was no objection; and therefore he varied the order, but he did not disagree as to the view which was taken of the whole case, as presented by the bill. The Lord Chancellor all along recognised that sort of doctrine which the profession generally understood had been stated with sufficient clearness in *Hill* v. *Thompson*,* and I understand in that particular case there is an objection of a given kind to the validity of the patent, namely, that the patentee was not the first inventor. Well, that was an objection of law, so if there was an objection to the validity of the specification, on the face of it, that would be an objection of law; but as I apprehend the circumstance, that there had been an exclusive enjoyment for a length of time under the patent, that would be, *primâ facie*, such a circumstance as would bind the Court to recognise the question of injunction, either in granting it or dissolving it.

I admit that if you were to say six years are sufficient, you may, by cutting off successive portions, reduce the six years to nothing. But I have nothing to do with any other case than the case before me, and I find the patent sealed in September, 1831, an injunction granted by the Lord Chancellor in September, 1837, and no attempt made to dissolve it until February, 1838; and then the attempt, such as it was, has been allowed to continue a sort of meagre existence from month to month, while affidavits have been put on the file. It appears to me to be rather too much to say that I am not to treat this case in the manner in which *Kay* v. *Marshall* and *Hill* v. *Thompson* were treated. And it is admitted, with respect to the order for indemnity, that it is unusual to make such an order for the indemnity of the defendant by the plaintiff, in case the thing should be proved to be wrong, and when I did go out of the way of the Court in *Kay* v. *Marshall*, to make an order consistent with justice, the result was, upon appeal, the order was held to be wrong, and I am not much inclined to go out of my way now. Therefore it appears to me, the usual order must be made in this case, namely, that the plaintiffs should be put upon terms to bring such action as they may be advised.

Order accordingly.

---

* Vol. i., p. 369.

Skewes.

BICKFORD AND OTHERS *v.* SKEWES.

In the Court of Chancery, before the Lord Chancellor (Cottenham).—March 8, 1839.

In this case an injunction had been granted by his Lordship to restrain the defendant from manufacturing fusees or fuzees, made according to the plaintiffs' patent, granted in 1831. The bill was filed in August, 1837, and an injunction obtained. A motion was made by the defendant in December, 1838, to dissolve the injunction, and to make an order that the plaintiffs should proceed to trial at the Assizes about to be held in the county of Devon. His Honour refused these applications, and simply directed that the plaintiffs should proceed to establish their right at law. From this order the defendant appealed.

Mr. Wigram and *Mr. Roupell* were for the plaintiffs, and *Mr. Jacob* and *Mr. G. Richards* were for the defendant.

It was contended on behalf of the defendant that the order should have directed the earliest opportunity of proving at law the plaintiffs' right to the patent, and that the Court ought not to protect the plaintiffs by injunction unless they proceeded at law in such manner as to bring on the trial at Devon at the coming Assizes. If the Court left the plaintiffs to take their own course and time, then the injunction ought to be dissolved.

On the part of the plaintiffs it was urged that all due diligence had been and would be used to bring on the trial. Up to the present time, all the delay had been with the defendant.

The Lord Chancellor gave judgment as follows:—In matters of this kind an injunction is granted or refused by the Court, as the case may be, until the right has been established at law. If the patentee has been long in the possession of his patent, the Court will not disturb the title thereto, but give credit to it till the patentee has had an opportunity of establishing his right at law. I cannot acquiesce in the statement at the bar, that the Court gives up all protection to the plaintiff when an action has been directed to be brought by him to prove his right, although it might have been reasonable, when

Bickford et al. v.

the defendant was restrained from infringing the patent, to compel the plaintiff to proceed as quickly as possible to try his right at law; yet the Court ought not to place the plaintiff at risk and inconvenience, if the defendant has conducted himself in such a manner as to have caused the pressure that is complained of. I find that, although the bill was filed and the injunction obtained in the month of August, 1837, no application is made by the defendant to dissolve the injunction till December, 1838. The plaintiff had the possession and enjoyment of his patent for a period of six years before the filing of his bill, and the defendant acquiesces in the injunction granted for a further period of sixteen months; and if the defendant had not been guilty of delay, the plaintiff might have had reasonable time to prepare himself for the trial of the action. The case must be dealt with according to the admitted dates. On this day, the 8th of March, 1839, I am asked to compel the plaintiffs to proceed to trial in this case on the 18th instant, in Devonshire, after the great delay of the defendant in not making his application to the Vice-Chancellor earlier than the 4th of the present month. I do not consider the application reasonable under the circumstances of the case, and shall refuse the motion; and as I do not find any opinion was expressed by the Vice-Chancellor to the effect that the defendant could not come to the Court in case any delay should arise on the part of the plaintiffs, but that he must apply to the judges in the common law courts, I refuse the motion with costs.

Motion refused accordingly.

BICKFORD AND OTHERS *v.* SKEWES.

In the Court of Queen's Bench.—Michaelmas Term, 1839.

THIS was an action brought by the plaintiffs to try the validity of a patent granted in 1831, for "an instrument for igniting gunpowder when used in the operation of blasting rocks, and in mining, called 'The Miners' Safety Fuze.'" The action was tried before *Mr. Justice Coleridge* and a Special Jury at the last Devonshire Assizes,

Skewes.

and a verdict was returned for the plaintiffs on all the issues.

The declaration in the usual manner set out the granting of the letters patent, and the use and exercise of the invention by the plaintiffs, and assigned as a breach the making and selling divers, to wit, &c., instruments for igniting gunpowder when used in the operation of blasting rocks, and in mining.

The defendant pleaded,—First, Not Guilty; secondly, That the patentee was not the first and true inventor of the said invention; thirdly, That the invention at the time of granting the said letters patent was not a new invention; fourthly, (setting forth the specification,) That the patentee had not particularly described and ascertained the nature of the said invention, and in what manner the same was to be performed in pursuance of the proviso. And with these pleas the following objections were filed according to the Statute:—

First, That the patentee was not the first and true inventor;

Second, That the invention was not new at the granting of the letters patent;

Third, That for various reasons set forth the specification was insufficient and uncertain; that the words "or any other material," were uncertain, &c., &c.

Mr. Sergeant Bompas moved for a rule to show cause why a nonsuit should not be entered, or a verdict for the defendant on the fourth issue, or why a new trial should not be had, on the grounds of the verdict being against evidence. The specification described the materials of which the fuze was to be made, and the words hemp, flax, cotton, or other suitable material. No evidence had been given at the trial of any other material being used than flax, nor was it shown that any other material would do. Such a description was bad, it would lead to experiments in order to ascertain which was the best material,—the public would have to go through these experiments, which was contrary to the principles laid down in all previous cases.* Then the specification used the words—gunpowder, or other proper combustible matter. There was no evidence that any other substance than gunpowder would do. One of the

---

* *Crompton* v. *Ibbotson*, vol. i., p. 458; *Turner* v. *Winter*, vol. i., p. 105.

Bickford et al

witnesses had said he thought detonating powder might do, but that he did not know. Here again experiment would be required to ascertain what would do, and what was the best for each particular case; the specification was uncertain and tended to mislead.

Lord Chief Justice Denman.—Was there any evidence that the other things, which he said would produce the effect, would not produce it?

Mr. Sergeant Bompas.—No, my Lord. This specification, I contend, is not uncertain by accident, but intentionally it attempts to grasp at more than the inventor himself had discovered, so as to keep out other persons. In support of the plea, that the invention was not new, the evidence showed that there was an Irishman who went about selling exactly the same fuzees, that he fired them under water. This was in Redruth, in the very centre of the mining population. Many persons saw them and took them in their hands; they were in the form of a cord, they undid them, and saw the powder. It was clear that the patentee must have got his invention from this previous public use, and a patent under such circumstances cannot be valid.

Mr. Justice Coleridge.—I thought all this was for the Jury. There was a great deal of negative evidence on the part of the plaintiffs; they called a great number of experienced miners, who said, that, until this invention, they had never known anything like it.

Mr. Sergeant Bompas.—The witness Trengrove said:—"I saw an Irishman ten or eleven years ago in the western part of the mine. He had some safety-rods with him, which he offered to the men who were going underground. He touched one end with fire—the powder took light—burned all through, from end to end—he threw it into the water—he stamped on it, and threw it about—there was no putting it out. Outside it was hemp, bound round just the same as we are using now; too much resin or tar about its outside. I saw no difference between it and the 'safety.'" Then your Lordship will find that the witness Clement said:—"I am a miner, at Camborne; reared there, and worked in the mines in the neighbourhood twenty years; worked at North Roskier. Whilst working there a man came round; they said it was an Irishman; about ten or a dozen years ago; saw him

Skewes

with a thing for blasting mines; it was made of hemp or twine, just the same as what the 'safety' is made of now. I do not know particularly what part of the mine I was in when I saw him there—near the shop, but I cannot say exactly where it was; I had two of them in my hand about eighteen or twenty inches long; we carried two underground, put it into a hole, opened the end of it, lighted it; it went off very well; he had several more pieces, but I did not see him do anything with it. Some time afterwards I saw Bickford's. I know no difference between the two; they burn in the same way. Mr. Thomas Davis worked there when I had this from the Irishman; we were talking to one another about it; he said there could be a little improvement. I saw the Irishman in the public-house the same evening; he had plenty of these things with him there; they were tied round in a bundle." Supposing this evidence to be believed, I submit there was a public use. The true principle is this, in order to ensure that when a person takes out a patent he shall be really the inventor, some precaution is necessary that he should not have had the means of learning it from others. There is every reason to suppose that Mr. Bickford obtained this invention from the Irishman, and the Learned Judge should have told the Jury that there had been a publication, and a public use of the invention before the date of the patent. There is no doubt that there was such a person as the Irishman; this was agreed by the witnesses on both sides, and there was evidence to show that Mr. Bickford entered into some agreement at a public-house with that person. This is all strong evidence in favour of the defendant, and the Jury ought to have found this issue for the defendant.

Lord Chief Justice Denman.—I think there must be a rule to show cause why a nonsuit should not be entered on the point of law arising on the specification, or why the verdict should not be entered for the defendant on the fourth issue, but with regard to the verdict being against evidence, my brother *Coleridge* is of opinion the Jury exercised their judgment on the subject. I have not the least doubt it was left fully to them to exercise that judgment, because it is clear otherwise, it would have been a mere absurdity to ask their opinion on the effect of the evidence.

Rule granted accordingly.

Bickford et al

This rule was subsequently argued, and in behalf of the defendant it was strongly contended that the specification was bad. For the plaintiffs it was urged that any of the materials mentioned in the specification would answer the purpose, and that the defendant, if the facts had been otherwise, would have shown such to be the case; there was no ambiguity.

The Lord Chief Justice gave judgment as follows:—The invention, the subject of this patent, professes to be an instrument for igniting gunpowder when used in the operation of blasting rocks, and in mining, and denominated "The Miners' Safety Fuze."

The fourth plea sets out the specification at length, and concludes by denying that the patentee had particularly described and ascertained the nature of the said invention, and in what manner the same was to be performed. The issue was joined upon this, and at the close of the plaintiffs' case, it was objected that the specification was defective in two respects, and that the Judge ought to have directed the verdict for the defendant. He thought that the question as to both was for the Jury—he then explained to them the specification—drew their attention to the supposed defect, as said to appear on the evidence—and left it to them to say, whether they were made out, or either of them. We think he could not properly have pursued any other course.

The specification, so far as it is material to be now stated, was thus:—"The instrument I manufacture, by the aid of machinery and otherwise, of flax, hemp, or cotton, or any other suitable materials, spun, twisted, and countered, and otherwise treated in the manner of twine-spinning and cord-making, as by the several operations hereinafter and in and by the drawings hereunto annexed, mentioned and described. By means whereof I embrace in the centre of my fuze, in a continuous line throughout its whole length, a small portion or compressed cylinder or rod of gunpowder, or other proper combustible matter, prepared in the usual pyrotechnical manner of fire-works for the discharge of ordnance."

Upon these words it was first objected, that the plaintiffs had failed to show that any other material but common gunpowder had ever been used in the fuze, or, if introduced, would answer the purpose desired, and the first part of this objection is true in fact; but it seems to us

Skewes.

immaterial if other materials, not specified (and it is certainly not necessary to specify all), but still within the description given, will answer the purpose; no ambiguity is occasioned—nothing that can mislead the public, or increase the difficulty hereafter of making the instrument, by the introduction of terms which import the patentee has himself used them. The latter part of the objection, if true in fact, would have been more material, because it does tend to mislead if it be stated that a whole class of substances may be used to produce a given effect, when, in fact, only one is capable of being so used successfully; but there was reasonable evidence, that other combustible substances, prepared in the manner described in the specification, would, if introduced, answer the purpose of the patent.

It is not an objection to a Specn that in practice only one ~~thing~~ and ~~[illegible]~~ ~~[illegible]~~ thing is always employed although there is no express confinement to the one thing; provided that other things might be made to answer if used according to the description in the Specn.

Colonel Pasley, a most competent witness, had no doubt one substance answering the description, namely, detonating powder, might be used; and the Jury were at liberty to infer, that any similar substance, prepared as required by the description, would have the same effect. The other parts of the instrument necessarily limited the combustible substance to be used to such as are capable of being reduced to a fine powder, and introduced into a very thin, continuous stream, or thread, into the centre of the fuze.

Some knowledge of pyrotechnics is and may probably be required in the person who is to read the specification for the purpose of making the instrument. The specification is addressed, not to persons entirely ignorant of the subject-matter, but to artists of competent skill in that branch of manufactures to which it relates; and such persons would be at no loss to select, if selection were at all necessary, the proper combustible material from those prepared for the discharge of ordnance for the purpose.

To whom Specn addressed

But the Jury probably thought, and on the evidence might well think, that the language of the specification was in this part literally true, and that no selection at all was necessary; and this brings us to the last objection, and the most relied upon, that there was a combustible substance prepared and used of the description in the specification, which would not answer the purpose, and this, if true, would be important; for then the specification would be substantially untrue, and would deceive.

Bickford et al. v.

The substance relied on is called portfire, by the application of which to the firing of cannon it is well known that they were at one time very commonly discharged; but we think that there are two grounds on which we ought not to yield to the objection, in a case in which we see no reason to infer from the language used any fraudulent intention to mislead the public, or to make it unnecessarily difficult to understand or apply the invention. One substance—gunpowder, was the composition chiefly relied on as the most efficacious—the most obvious—the most easily procurable article for the purpose. At the same time, as, on principle, similar combustibles, prepared as fireworks are, would also have the same effect, words are introduced by the patentee, which enable him to include them, for the double purpose of making it an infringement of the patent to use them during its existence, and of directing the attention of the public to them after it had become public property. Language thus used ought not to be astutely construed, so as to overthrow a patent, yet we have a right to require that the objector should at the trial make his point clear, and clearly call the attention of his opponent to it. This was not done, and we are at this moment left in doubt on the evidence what the term portfire means, whether it is the whole instrument, including both the case and combustible within, or whether it means the latter only. If the former, it is clearly out of the question, and it was certainly so understood by the plaintiffs, for they called an officer of artillery to speak of it, in order to put it at once out of the case, by showing the portfire as used in the service is a totally different thing from the safety fuze, and therefore did not interfere with its claims to novelty. The Counsel for the defendant then asked a question or two as to the mode of preparing and combining the combustible within the case, from which was ascertained the fact of destroying the case as it burnt, and on this the objection was afterwards raised. What the quantity of combustible was in the portfire—whether it would have the same effect of destroying the case, if introduced into it in the very small proportion which the gunpowder in the fuze bears to the cylinder containing it, and many other matters necessary to the point, and to establish the objection, were entirely passed over.

Feeling of Court towards language of Specn.

Upon the objection raised, it was proper, indeed, to take

Skenes.

In re Sharp's Patent

the opinion of the Jury, but if they thought it not established satisfactorily, we see no reason to disturb their conclusion; and it may be also sustained on another ground. In one sense, undoubtedly, the portfire may be said to be used in discharging ordnance, because it ignites the priming or train, which causes the powder in the chamber of the cannon to explode; but it may be well questioned, whether the term discharging ordnance ought to be understood in that sense in this specification. The portfire, so understood, is no more than a mere match, but the fuze is used to perform the operation of a train, the fuze in it being concealed, and the case unconsumed. It could not be used in discharging ordnance in the sense portfire is used for that purpose, as the portfire, whether we mean by that term the whole instrument, case and combustible, or combustible only, has not been shown to have been used or fitted for the discharge of ordnance in any other sense.

Whether we regard the imperfect manner in which this objection was presented, or its entire failure; in fact, if the specification be understood in one, and by no means an unreasonable sense, we think the Jury were not unwarranted in their finding on the fourth issue, and that this rule therefore must be discharged.

Rule discharged.

IN THE MATTER OF JOHN SHARP'S PATENT.

In the Court of Chancery.—May 29, 1839.

This was an application on the part of Joshua Wordsworth, of Leeds, in the form of a petition to the Master of the Rolls, praying that a memorandum of alteration in the specification of the said John Sharp, of the 8th of April, 1837, which had been filed and enrolled under the Letters Patent Amendment Act, might be taken off the Rolls of the Court and cancelled.

Mr. Russell appeared for the petitioner, but the respondent did not appear, he being advised that not only had the Court of Chancery or the Master of the Rolls no

In re

jurisdiction over the subject-matter of the petition, but that the service of it upon the respondent (who resided in Scotland) was altogether null and void. *Mr. Russell* applied for an order as of course, in default of the respondent appearing, and tendered an affidavit of service of the petition; but the *Master of the Rolls* said, he always considered that a party not appearing supposed everything would be done correctly in his absence, therefore he must hear the case first, before making any order.

The fact of the service of the petition in Scotland was then brought by the officer of the Court to the notice of the *Master of the Rolls*, who immediately called upon *Mr. Russell* for some authority for such a course of proceeding.

Mr. Russell submitted that it was a case arising out of the new Act, for which there could be no precedents. That the petitioner would have no means of redress if some mode of serving parties out of the jurisdiction was not allowed.

The Master of the Rolls said, that might be a very good ground for an application for substituted service, but not for such a service as had been in this case, and asked if the respondent had employed any agent in London in preparing and filing the memorandum, on whom service might be ordered? He, however, inquired, whether there was any power given him by the Act to interfere in any way? Was not the memorandum void, if, as the petition contended, it exceeded the limits of the Act—and what more could the petitioner want?

Mr. Russell contended that the existence of the memorandum upon the roll of the Court gave the patentee a *primâ facie* right, which was a grievance to the patentee and others, and that they ought not to be driven to a more expensive remedy.

The Master of the Rolls.—You have a plain, easy remedy elsewhere. If it goes beyond the Act, as you say, it is void, and could not be given in evidence or made any use of, besides, if it were a specification under the old law, what jurisdiction should I have to take it off the roll?

Mr. Russell.—The Court has power over its records, and has been in the habit of exercising jurisdiction over

Sharp's patent

any alterations in them. This is a corruption of the records of the Court.

The Master of the Rolls.—The Court has never gone further than to allow of clerical errors being amended.

Mr. Russell.—There are cases where, after amendments have been allowed, other parties have come and complained of them, and orders have been made to annul such amendments.

The Master of the Rolls.—But there an injury was done to parties; here there is none. You say the memorandum is wholly void.

Mr. Russell suggested that the Court should make an order *nisi* to take the memorandum off the file to be served on the patentee's agent in London.

The Master of the Rolls.—I do not know that the law gives any such remedy; the Act is silent upon the subject. Does it not give certain protection to the public by *caveats*, and by empowering the *Attorney* and *Solicitor-General* to direct advertisements?

Mr. Russell.—It certainly does, but until lately these guards have not been acted upon. Now they are; and such a case would probably not again occur.

The Master of the Rolls.—If I were to decide that this memorandum was void, and so order it to be taken off the roll, and it turned out that it was not so, what situation would the patentee be in? I should be depriving him of his patent. I apprehend I have no discretion about receiving a memorandum when it has been sanctioned by the *Attorney* or *Solicitor-General*, and therefore how could I make an order which would have the effect of depriving a patentee of his rights under the Act altogether? At all events I can make no order on the present service.

Mr. Russell then applied for leave to make a substituted service of the petition, but the *Master of the Rolls* declined granting this, until there was proper evidence before him that the patentee had an agent in England upon whom such service could be properly made, and he was strongly inclined to think he could do nothing in it.

Petition dismissed accordingly.

Losh v.

LOSH *v.* HAGUE.

In the Court of Chancery, before the Vice-Chancellor (*Sir L. Shadwell*), *August* 9, 1837.

THIS was an application on behalf of the plaintiff for an injunction to restrain the defendant from using the invention described in the specification of a patent granted on the 31st of August, 1830, for Certain Improvements in the Construction of Wheels for Carriages to be used on Railways.*

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—Now know ye, the object that is intended to be attained by my said improvements in the construction of wheels for carriages to be used on railways, is to render such wheels more durable and less liable to be damaged or broken, than the wheels hitherto in use upon railroads, by the violence of the shocks to which they are liable when travelling on railways, and more particularly when propelled with rapid motion along railroads. The spokes, the rims or felloes, and the tires of wheels constructed according to my said improvements are to be made wholly of malleable iron. The spokes are to be joined one to another, and to the rims or tires, and to a cast-iron central nave, in the manner hereinafter particularly set forth, whereby the spokes are all so firmly fixed to the cast-iron nave, and to the rim, and united one to another, that they will all act simultaneously to support or sustain the cast-iron nave in the centre of the wheel, and to preserve the true form of the wheel in every respect. By forming those parts of the wheel which are most liable to suffer injury from shocks, of malleable iron, and the several parts being firmly joined, the liability of such wheels to fracture will be greatly diminished. The drawings hereunto annexed represent different modes of constructing wheels according to my said improvements for carriages to be used on railways.

"*Description of the Drawing.*

"Fig. 1, is a side elevation; and,

"Fig. 2, a section of a wheel for carriages to convey goods and passengers upon railways, and particularly for those which are propelled with a rapid motion. A, is a central nave of cast-iron, with either a circular or a square hole through the centre of it, to fix the wheel to the axle. *a*, *b*, *c*, are the spokes made from bars of flat iron, which bars for a carriage weighing, with its load, about four tons, (that weight being intended to be borne upon four such wheels,) may be half an inch thick, by three inches broad, and if the wheel is three feet diameter, it should have eight or ten arms, or if the wheel is thirty-two inches diameter, it should have six or eight arms. In the formation of such a wheel, the bars for the several spokes are wrought with elbow bends, *p*, *q*, *t*, near the middles of their lengths, the prolongations beyond those elbow bends being curved, as represented, at *p*, *r*, in the drawing; so that, when the proper number of such spokes are put together, their curved prolongations beyond the elbow bends will form a complete

Hague

Mr. Knight and *Mr. Purvis* were for the plaintiff; and *Mr. Jacob*, *Mr. Richards*, and *Mr. Chandless* for the defendant.

circle, and their straight parts within those elbow-bends will form the radii of that circle. To unite all these spokes together to form a wheel, the proper number are laid round in a mould suitable, prepared for the purpose of casting the central nave, in the manner usually practised by iron-founders. The central ends of the spokes which project into the cavity of the mould for the nave, being heated before so laying them in the mould, according to the usual practice of ironfounders when they intend to run cast-iron around wrought-iron; and the cast-iron for forming the nave, A, is run around the inner or central ends of all the spokes, which ends had been previously indented or cut dove-tailed, so much that they cannot draw out of the cast-iron which is run around them, or a hole may be pierced through the said ends about which the cast-iron is to be run, and for security against splitting the cast-iron nave, circular hoops, *v*, *v*, of malleable-iron may be put on around both the projecting ends of the cast-iron nave, A, those hoops being applied hot, so as to shrink on the cast-iron and bind it very firmly. The outer ends or curved prolongations of the spokes beyond the elbow-bends (which prolongations fit together, as shewn in the drawing, to form a circular rim) overlap each other sufficiently to enable them to be united one to another, for instance, the extreme end, *r*, of the curved prolongation of the spoke, *a*, is accurately fitted into and upon the recess, at *q*, which is formed like a double crank-bend in the elbow-bend of the spoke, *b*, and the extreme end, *s*, of the curved prolongation of the spoke, *b*, is in like manner received into a similar recess, *t*, at the elbow-bend of the spoke, *c*, and so of all the others. The extreme end of each prolongation, when it thus overlaps and rests upon the elbow-bend of the next spoke, must form a good joint in the recess, which joint is secured by welding, or a strong rivet or rivets put through the extreme end of the prolongation, and through the recessed or double-cranked part of the elbow-bend. The curved prolongation of the spokes when thus rivetted together at their several jointings, form a firm circular rim, *p*, *r*, *q*, *s*, *t*, to the wheel around which the wrought-iron tire, T, that is run upon the rails of the railway, is fixed, by the same means as is usually taken for applying the hoop-tire on wheels of carriages, viz., the said tire is a circular hoop formed of a wrought-iron bar rolled into the proper shape for travelling upon the rails. A proper length of such a bar is curved into a circle, and the ends welded together, and the hoop being applied whilst hot around the circular rim, (made as aforesaid by the curved prolongations of the spokes,) the shrinking or contraction of the hoop in cooling firmly embraces the said circular rim and forms a strong and secure wheel. T, T, is the tire with what is called its crease or flange, *f*, which is a rim projecting out on one side of the wheel beyond that part of the edge of the rim which is to bear on the top of the rails, in order that the flange may apply to the side of the rails and prevent the wheel running off sideways from the rails. The form of the flange, *f*, and of the external part of the tire, T, may be the same as commonly used, and the hoop of tire may be fastened on the rim, formed by the prolongations of the spoke by conical pins put through the tire and the said rim, in a direction pointing towards the centre of the wheel; the pins being fitted into corresponding holes bored through the

Losh

The following was the evidence in the cause on behalf of the plaintiff:—

Affidavit of *William Losh*, of Benton House, in the

ire with their longest ends on the outside thereof, that the pins may hold the tire tight without any projecting heads on the outside of the tire. The small ends of the pins which project through the inner rim may be rivetted or have nuts screwed on them. Or in order to make the tire hold very securely, on the outside of the rim formed by the prolongations of the spokes without any pins. The iron-bar of which the tire is formed, may be rolled of the shape shewn on a larger scale in fig. 3, with a bead, *g*, *g*, projecting about one sixteenth of an inch from each edge of the bar above the flat surface thereof, on that side which is to form the interior of the hoop for the tire; the breadth or space left vacant between those beads being sufficient to receive the edge, *r*, of the rim formed by the prolongations of the spokes. The expansion of the hoop of tire when heated, will allow it to be applied around the said rim, *e*, but when it contracts thereon by cooling, the projecting beads, *g*, *g*, will overlap each edge of the rim, and effectually prevent the tire coming off therefrom. Or otherwise for the same object the bars of which the spokes are formed may be rolled rather concave on one side, like a shallow gutter or trough, the other side being either convex or flat; and when those bars are wrought into spokes with elbow-bends, as before described, their concave sides should be outwards on the circumference of the circle that is to be formed by the prolongations of the spokes beyond those elbow-bends, (see a section on a larger scale, fig. 4,) and in that case the bar of which the tire is formed shall be rolled with a corresponding convexity on that side which is to form the inside of the hoop, which hoop being made of a proper size, and then heated in order to expand it, and get it on around the rim formed by the prolongations of the spokes. The convex inside of that hoop when it contracts by cooling will fill the concave on the circumference of the prolongations, and effectually prevent the tire coming off therefrom, or *vice versâ;* the bars of which the spokes are formed may be rolled convex, and the hoop of tire concave. Note.—Instead of making each of the spokes and its prolongation out of the same piece of iron-bar, as before directed, the spoke may be made of a piece of one-bar, which is rolled to any pattern of transverse section that is judged most suitable for the spokes of the wheel, and the prolongation made from another bar, rolled to any different pattern of transverse section, which may be judged most suitable for the circular rim that is to be formed by the said prolongations. The said two pieces of different bars being firmly welded together at the elbow-bend, so as to be as strong as if both spokes and prolongation were made by bending one piece of iron-bar. This mode of making the elbow-bend will facilitate the formation of the recess or double-cranked bend, into which the extreme end of the next prolongation is to lodge.

"Fig. 5, represents a side elevation of a segment of another wheel made according to my improvements. The ends of the spokes are put into a mould and hammered into the form or forms shewn at *a*, *a*, *a*, *a*, in the drawing; or they may be spread out into any other form that will be found most convenient for welding them to the rim. A circular ring, *s*, *s*, of wrought-iron is then made of the proper diameter to receive the tire, and the spokes are welded to it. To make this rim perfectly

Hague.

county of Northumberland, Esq.—Saith, that in or before the year 1830, he, this deponent, invented certain im-

circular and of a proper diameter to fit accurately to the inside of the hoop of tire, T, which is intended to surround it, the said rim may be fitted upon a mandril or circular mould, which has openings or slits in its circumference, at proper distances to receive the arms when the rim is put upon the mandril by the common expedient of expanding the rim by heat, dropping it on the mandril, and whilst the rim is contracting again in cooling, it is retained at the required diameter by the resistance of the mandril, which mandril may be made in two halves, or in three or more parts, so kept apart as to form a true circle of the proper size, by the interposition of suitable wedges, or by screws, which, being withdrawn or unscrewed, the said parts will collapse to facilitate the taking off of the wheel from the mandril when cold. Or the spokes may be welded to a bar of wrought-iron at proper distances apart and at right angles to that bar, and then turning the bar into a circular form, by hammering it into a circular mould, which should be the segment of a circle of the diameter of the inside of the tire; and when the rim is thus formed into a circular shape, and the ends of the bar forming the rim are brought together, they should be welded. To make this rim, to which the arms have been previously welded, of the exact diameter required for the rim, it should be fitted upon a circular mandril prepared with openings or slits to receive the arms, in the manner above described. Or otherwise the said rim, to which the arms are previously welded and its ends welded together, may be heated red and hammered down into a true circular mould, which is made bell-mouthed to facilitate the entrance of the rim into it. Or I weld the spokes immediately to the rim or hoop of tire, as shewn at *a*, *a*, in the drawing, without the intervention of an interior rim.

"Fig. 6, represents another wheel, in which each spoke is formed of two bars of iron laid together at one end, as at *a*, *a*, *a*, to form like one bar, and the prolongations of each of the single bars of the spokes beyond the elbow-bends, *b*, *b*, *b*, of each of the bars, being blended in opposite directions, as shewn in the drawing, they form a curved prolongation of the compound spoke on each side of it; those prolongations of the different spokes meet each other, as at *o*, *o*, *o*, in the middle of the spaces between the spokes, and where those ends overlap, they may be rivetted together to form a circular rim, around which the tire is applied; or the overlap at the ends of the spokes where they meet may be welded together as at c, a mode of junction which will add much to the support of the tire. Or the bar of which each spoke is formed, may be blended with two elbow-bends, the middle part between those two elbow-bends forming a portion of the circular rim, and the two ends of the bar being straight, thus ▽, so that each bar forms a sector of a circle, and a proper number of such sectors being put together with the straight parts in contact, will form a wheel whereof each spoke is composed of two bars; the circular rim of the wheel so composed, must be surrounded by a circular hoop of tire. The spokes in figs. 5 and 6 must be attached to the nave, in the same manner as before described in figs. 1 and 2.

"Fig. 7, represents a section of another form of wheel, the spokes of which are made by bending a bar of iron into the shape shewn at *a*, *a*, *b*, *b*. The end, *b*, *b*, forming a double elbow-bend, is placed in the

Losh

provements in the construction of wheels for carriages to be used on railways. That after the specification of his

transverse direction of the bar of iron, constituting an inner rim, such as hereinbefore described, and is joined to such rim by rivets, or by welding. The ends, *a*, *a*, are to be fixed in the nave by running cast metal around them, in the manner described in fig. 1. Upon the spokes and rim, thus combined, I put the tire in the manner directed in the description of figs. 1, 5, and 6. The bar of iron out of which these arms are made, may be flat, square, or round. The rim of tire, previously described, is of the form adapted for travelling upon that kind of railroads, commonly called the hedge rail, but rims of tire, such as shewn at T, in fig. 8, suitable for travelling upon the plate rail, may be laid upon the interior rim of any of the wheels hereinbefore described, and in the manner therein directed.

" Fig. 8, represents a section of a wheel intended to be used upon train or plate railroads for carriages, meant to carry 20 cwt. upon four such wheels, each having six or eight spokes; the spokes for this wheel may be made of three-fourths of an inch square iron, or seven-eighths of an inch, round iron. They are to be joined to the interior rim or to the rim of tire, where no interior rim is required, and to the nave by the means described in fig. 5.

" Having now described the construction of wheels made according to my improvements for carriages to be used on railroads; I do hereby declare that I make no claim to the exclusive right of iron spokes, or wrought-iron tire for such wheels, nor to the mode, hereinbefore described, of uniting wrought-iron spokes to the cast-iron nave; but my invention consists, First, in the improvement, hereinbefore described and represented in figs. 1 and 2, of making the wheels of carriages to be used on railways with wrought iron spokes, having elbow-bends and curved prolongations from such spokes, which prolongations join one to another, in the manner hereinbefore described, so as to form a circular rim of wrought-iron to support and give strength to the hoop of wrought-iron tire which is applied and fixed around that circular rim.

" Secondly, in the improvement hereinbefore described and represented in figs. 3, 4, and 8, of either making the circular hoop of iron-tire, which is to be applied around the circular rim of any wheels for carriages to be used on railways, out of bar-iron, which is rolled with projecting beads at the edges, on that side which is to form the inside of the hoop of tire, in the manner hereinbefore described and shewn in figs. 2, 3, and 8; or else of making the said hoop out of bar-iron, rolled with a convexity in the middle of that side which is to form the inside of the hoop, corresponding to a concavity, which must in that case be given to the exterior circumference of the rim of the wheel as hereinbefore described and shewn in fig. 4; or else in making the interior of the tire concave, and the inner rim, formed by the prolongations of the spokes, convex, as previously described, in order that in any case the hoop of iron may, after it has been put on in a heated and expanded state, be retained securely from coming off, either by the overlapping of the projecting beads of the tire over the edges of the rim of the wheel, or else by the interlocking of the said convexity or concavity of the tire into the said concavity or convexity of the rim of the wheel.

" Thirdly, in the improvement, hereinbefore described and represented in fig. 5, of making the wheels of carriages to be used on railways, with

Hague.

said invention had been enrolled, this deponent was informed and advised that it was doubtful whether a certain plan therein described, of fastening on the tire by means of a convex and concave surface, had not been practised, with some modification, in some kind of wheels, before the date of the said letters patent; and this deponent accordingly caused a certain disclaimer in writing, bearing date the 18th day of May, 1836,* and duly

wrought-iron spokes, moulded at their outer ends into the form shewn in the drawing, fig. 5, as at *a, a, a, a,* or having elbow-bends at the outer ends to form feet, as at *d, d, d,* which ends of the spokes are joined by welding, or by conical bolts or rivets without heads, at the outside, either to a complete ring of wrought-iron, around which a hoop of wrought-iron tire is to be applied and fixed, or else to a hoop of wrought-iron tire, made of sufficient strength to retain its circular curvature without any such inner ring, in manner hereinbefore described.

"Fourthly. In the improvement hereinbefore described and represented in fig. 6, of forming each spoke of two bars of iron laid together at one end, as far as the elbow-bends, and the parts beyond those elbow-bends being bent in opposite directions to form curved prolongations of each of the compound spokes on each side thereof, and which prolongations when united together form a circular rim, upon which the tire is laid, as before described and as shewn in the drawing, fig. 6.—In witness whereof, &c.—WILLIAM LOSH."

---

* The disclaimer was as follows:—

"Disclaimer entered pursuant to an Act passed in the 5th and 6th years of His present Majesty's reign, entituled 'An Act to amend the Law touching Letters Patent for Inventions,' with the Clerk of the Patents of England, by William Losh.

"I, the said William Losh, do hereby declare that since the enrolment of the specification of my said invention, pursuant to the proviso in the said letters patent in that behalf contained, I have been advised that it is doubtful whether the plan of fastening on the tire by means of one convex and one concave surface has not been practised with some modification in some kinds of wheels before the date of the said patent, and for this reason, I, the said William Losh, do hereby disclaim the following parts of the said specification, that is to say: towards the middle of the specification where the mode of fastening the tire on the rim is described, I hereby disclaim the words 'or otherwise for the same object the bars of which the spokes are formed may be rolled rather concave on one side, like a shallow gutter or trough, the other side being either convex or flat, and when those bars are wrought into spokes with elbow-bends, as before described, their concave sides should be outwards on the circumference of the circle that is to be formed by the prolongations of the spokes beyond those elbow-bends (see a section on a larger scale, fig. 4), and in that case the bar of which the tire is formed shall be rolled with a corresponding convexity on that side which is to form the inside of the hoop, which hoop, being made of a proper size, and then heated, in order to expand it, and get it on around the rim formed by the prolongations of the spokes. The convex inside of that hoop, when it contracts by cooling, will fill the concave on the circumference of the

Losh

executed by this deponent, according to the Act of Parliament in that case made and provided to be entered, and the same was duly entered with the Clerk of the Patents of England; that he has expended 7,000*l.* and upwards in constructing the machinery, implements, buildings, and other materials, necessarily required to enable him to manufacture his said wheels; that his said patent, and the rights thereby secured to him, have not at any time heretofore been questioned or disputed; and that the wheels constructed according to the said specification of this deponent's said invention, are in very general use, and are daily coming into more extensive use, and have already materially advanced and increased both the travelling of passengers and the carriage of goods by railways, in consequence of the great strength of the said wheels and their extraordinary capability of bearing uninjured the violent and rapid shocks and concussions to which railway wheels are peculiarly liable, and which shocks and concussions, before this deponent's invention of his said wheels, have been, and yet are, so generally destructive to the various descriptions of wheels used on railways, and not made upon or according to this deponent's invention, and whereby the risk and dangers of railway travelling, and carriage were, and are, very much greater than in any case where this deponent's said wheels are used: that he has made wheels according to each of the plans and modes shewn in his said specification, and that they have all been used and found to answer most effectually the purpose described in his said specification; that the said

---

prolongations, and effectually prevent the tire coming off therefrom, or *vice versâ*, the bars of which the spokes are formed may be rolled convex, and the hoop of tire concave.' And further on, in the claiming clause of the said specification under the second head of the claim; I hereby disclaim the words 'or else making the said hoop out of bar-iron rolled with a convexity in the middle of that side, which is to form the inside of the hoop corresponding to a concavity, which must in that case be given to the exterior circumference of the rim of the wheel as hereinbefore described and shewn in fig. 4, or else in making the interior of the tire concave, and the inner rim formed by the prolongations of the spokes convex, as previously described, in order that in any case the hoop of iron may, after it has been put on in a heated and expanded state, be retained securely from coming off either by the overlapping of the projecting beads of the tire over the edges of the rim of the wheel, or else by the interlocking of the said convexity or concavity of the tire into the said concavity or convexity of the rim of the wheel.'—In witness whereof, &c.—William Losh."

Hague

letters patent have ever since the grant thereof, remained and still are unrevoked, unimpeached, and in full force and effect, and that this deponent hath from the date of the said letters patent, made, used, and exercised his said invention, under the authority of the said letters patent, with considerable profit and advantage: that he has been credibly informed, and verily believes, that John Hague, of Cable-street, Wellclose-square, in the county of Middlesex, millwright and engineer, has lately made use of, and put into practice, this deponent's said invention, and counterfeited, imitated, and resembled the same, and thereby derived to himself very considerable profits and advantages, and that he still continues to use and put in practice this deponent's invention. That in or about the month of March he was first informed that the said defendant, John Hague, had made and manufactured wheels precisely the same in the principle of the construction thereof as the said wheels invented by this deponent as aforesaid, and described by deponent in his said specification, and that the said wheels so made and manufactured by the said John Hague were for carriages to be used on railways, and that the said John Hague has sold various quantities of the said wheels so made and manufactured by him to divers persons whose names and residence this deponent has been unable to discover, and is therefore unable to state; however this deponent saith, that he has been credibly informed, and verily believes, that the said John Hague has made many wheels since the grant of the said letters patent, in counterfeit or imitation or resemblance of this deponent's said invention, as specified in the said specification, and in the said figure thereunto annexed, marked 6, and that the said wheels so made and manufactured by the said John Hague were constructed in the following manner, (that is to say,) bars of wrought-iron were bent and formed into the shape shewn by fig. 1, drawing A, and the ends were welded together at the points *a*, and a series of such bent bars of wrought-iron were made into wheels for carriages to be used on railways, in the following manner: a number of the bent bars, fig. 1, had the parts, *a*, combined together by means of a cast-iron nave, as is shewn at fig. 2, and the parts, *b*, *b*, produced a ring or felloe for the wheel, on to which a wrought-iron flanched hoop or tire was shrunk by first

Losh v.

heating such hoop or tire, in order to expand the same, and render it capable of being placed on the outer periphery of the parts, *b*, of the bent bars of wrought-iron, fig. 1, and when on and shrunk by cooling, such flanched tire or hoop tightly embraced the wheel, *a*, *b*. That on or about the 23d day of March last past, having occasion to call on Mr. Robert Jeffery of Upper North-place, Gray's-inn-road, railway carriage-maker, on the subject of an order for a sale to him of some of this deponent's said wheels, the said Robert Jeffery asked the deponent whether he, this deponent, had a patent for the wheels which were known as Losh's patent, and that this deponent informed the said Robert Jeffery that he had a patent for the said wheels, whereupon the said Robert Jeffery informed this deponent that the said John Hague was making wheels like them: that a few days subsequently thereto, this deponent had a conversation with Mr. Robert Stephenson, the engineer of the London and Birmingham Railway Company, also on the subject of an order for a sale to him of some of this deponent's said wheels, who told this deponent that the said John Hague was making this deponent's wheels: that he, through his solicitors, Messrs. Bell, Brodrick, and Bell, of Bow Churchyard, applied to the said John Hague on or about the 8th day of May last past, and requested the said John Hague to desist from making or manufacturing any wheels according to the said invention of this deponent: that he has been credibly informed and verily believes that the said John Hague has recently received an order to make a large quantity of wheels, constructed according to the improvements invented by this deponent as aforesaid, and as specified in the said specification, and in the said eight figures or drawings thereunto annexed, or in some or one of such figures, from the London and Birmingham Railway Company, and that the said John Hague, intends to make and manufacture a large quantity of wheels according to the said improved construction thereof so invented by deponent as aforesaid, in order to supply the said London and Birmingham Railway Company therewith, in pursuance of the said order.

Affidavit of *Thomas Storey*, of St. Helen's Auckland, county of Durham, engineer.—Saith, that he, this deponent, is in the habit of seeing the wheels invented by the plaintiff used upon railways, and is well acquainted

Hague.

with the same; that he believes them to be the invention of the said plaintiff, and considers them to embody very great improvements upon any previously used for railway purposes; that he considers them to be less liable to accident, much stronger and better calculated for rapid travelling than any others which have come under his, this deponent's, observation; and that they are of great benefit to the public wherever they are made use of, inasmuch as many accidents and loss of life are prevented by their peculiar construction, and their use for carriages travelling on railways with great speed.

Affidavit of *John Buddle*, of Wallsend, county of Northumberland, engineer.—Saith, that he is well acquainted with the plaintiff's invention of certain improvements in the construction of wheels to be used on railways; and with the wheels made according to such improvements, and which are in use; that this deponent considers the same as an invention of great value and importance, by reason of the great strength of the wheels, their greater durability and resistance to the shocks to which wheels are liable when travelling on railways with rapid motion, and that they are calculated to prevent accidents and loss of human life; that he hath used the said improved wheels for four years last past, and now uses the same, from which he is become well acquainted with the said invention, and that he considers the same as an important and essential improvement in wheels to be used on railways, especially where great speed is requisite: that he verily believes that the plaintiff is the original inventor of the said wheels.

Affidavit of *Joseph Laycock*, of Winlaton, county of Durham, iron-merchant.—Saith, that he knows, and is well acquainted with the improved wheel invented by the plaintiff for carriages to be used on railways, and for which the plaintiff obtained his late Majesty's letters patent, and that he, this deponent, hath used the same wheels in large quantities for upwards of twelve months, and now uses the same; that he is well acquainted with the principles and construction thereof, and that he believes the said plaintiff to be the original inventor of the said wheels: that in the month of April last past, this deponent saw in the manufactory of the said defendant at Cable-street, in the neighbourhood of Wellclose-square, Middlesex, wheels for

Losh

carriages to be used on railways, some of which wheels were in a finished state, and others in the act of being made, by the defendant's workmen there; that this deponent carefully examined those which were finished; that they appeared to this deponent, and he considers them to be the same, in the principle of their construction, as those invented by the plaintiff, and that the only difference between them were, that in the wheels so made at the defendant's manufactory, the outer rim or tire was not grooved, whereas the plaintiff's wheel is grooved to receive the inner rim; and, secondly, that in the wheels so made at the defendant's manufactory, the spokes were straight, whereas those of the plaintiff's said wheels are generally bent: that the wheels which he saw at defendant's manufactory as aforesaid were precisely the same in the principle of the construction thereof, as the said wheels invented by the said plaintiff, with the exception of the aforesaid differences, which this deponent considered to be immaterial.

Affidavit of *William Bell*, of Bow Church-yard, in the city of London, gentleman.—Saith, that he is the agent of Messrs. Carr, Jobling, and Fox, the solicitors of the abovenamed plaintiff, and that this defendant as such agent, at the request of the said plaintiff, wrote the said defendant a letter, of which the following is a copy:—

"*Bow Church-yard, 8th May,* 1837.

"Sir,—We are apprised that you are now manufacturing a wheel, which is a decided and open infringement of Mr. William Losh's patent wheel for railway carriages. We, therefore, require you immediately to desist from such manufacture, and to compensate our client for the injury he has sustained by your use of his invention. We are, Sir, your obedient Servants,

"*Bell, Brodrick, and Bell.*

"*Mr. John Hague, Millwright,*
"*26, Cable-street, Wellclose-square.*"

That in consequence of the said letter, the said defendant, in a day or two after the said letter was written, called upon this deponent at his office, and stated to this deponent that he was not, and had not been manufacturing wheels upon the principle of the said plaintiff's invention, nor had he pirated the said plaintiff's invention; and that the wheels which he, the said defendant, was making, were

Hague.

made on a different principle from those of the said William Losh, and were only like those of the said William Losh, in appearance, but not in principle; and that if there were any opinion or impression entertained, that he, the said defendant, was imitating the said William Losh's wheels, such opinion or impression arose from a superficial knowledge of the construction of his, the said defendant's, wheels: the said William Losh was at Newcastle-upon-Tyne, or the neighbourhood thereof, at the time that deponent had the said interview with the said defendant; and that deponent thereupon wrote to the said William Losh, informing him of the statement of the said defendant: that the said William Losh did not return to London until the month of June last, when he informed this deponent, that he, the said William Losh, had then obtained clear evidence of the fact, that the said defendant had been pirating and manufacturing the wheels of the said William Losh: that in consequence thereof he wrote the said defendant a letter, of which the following is a copy:—

"*Bow Church-yard*, 14*th June*, 1837.

"Sir,—Mr. William Losh has obtained ample and indisputable evidence, that you have been committing a direct infringement of his patent, by manufacturing his wheels so generally used for railway carriages. We, therefore, apprise you, that unless you hand us a statement of the quantity of wheels you have thus made, and account to us for their profits, and give a satisfactory guarantee that you will forthwith discontinue the manufacture, we shall be under the necessity of instituting immediate proceedings against you, and we must request a distinct and definite answer from you in the course of to-morrow. We are yours, obediently,

"*Bell, Brodrick, and Bell.*

"*Mr. John Hague, Millwright,*
"26, *Cable-street, Wellclose-square.*"

That the said letter was sent to the said defendant, and left at his place of business; and that in two or three days afterwards a person called upon the deponent, and stated that the said defendant was not in town, and that he had called on the subject of the said letter, and required the deponent to state to him the number of wheels which the said William Losh, as this deponent alleged the said defendant had made, according to, and in viola-

Losh v.

tion of the said William Losh's patent; at the same time the said person denied that the said defendant had made any wheels upon the principle of the said William Losh's invention; and deponent asked the said person if he had not seen the specification of the patent of the said plaintiff for his railway wheels, and that the said person admitted that he had seen it: that he told the said person he could not inform him of the number of wheels which the defendant had made in piracy of the said plaintiff's invention, and that it was this information which the deponent required from the said defendant; and that the said person (who stated he was in the service of the said defendant) replied, that defendant had not made any wheels upon the plan of the said plaintiff's invention: that on the occasion before mentioned, when he had an interview with the said defendant, he admitted, in answer to a question of deponent, that he, the defendant, had seen and read the specification of the said plaintiff's patent for railway wheels: that the said defendant has not rendered any account to the said plaintiff, or to deponent, in pursuance of the said letter of deponent.

Affidavit of *Robert Jefferys*, of Upper North-place, Gray's-inn-road, county of Middlesex, railway carriage builder.—Saith, that having business to transact with the above-named defendant for some months last past, he, this deponent, has continually called in Cable-street, at the factory of the defendant: that till within the last three months, he has many times seen wheels made and constructed according to the drawing marked A, produced and shewn to this deponent at the time of swearing this affidavit; that is to say, bars of wrought-iron were bent, and formed into the shape shewn at fig. 1, and the ends were welded together at the point, A, and a series of such bent bars of wrought-iron were made into wheels for railway carriages, in the following manner: a number of the bent bars, fig. 1, had the parts, A, combined together, by means of a cast-iron nave, as is shewn at fig. 2, and the parts, B, B, produced a ring or felloe for the wheel, on to which a wrought-iron flanched hoop or tire, suitable for railways, was shrunk, by first heating such hoop or tire, in order to expand the same, and render it capable of being placed on the outer periphery of the parts, B, of the bent bars of wrought-iron, fig. 1, and when on and shrunk by cooling,

Hague

such flanched tire or hoop tightly embraced the wheel, A, B; and this deponent, at different times of his being at the factory in Cable-street, did see such process of shrinking on of the flanched tire, on to the wrought-iron bent bars, A, B; and this deponent saw many sets of such wheels, complete, and in various stages of completion, and the said defendant, John Hague, explained to this deponent the nature and construction of such wheels, with a view to induce this deponent to give an order: that having previously heard of and seen wheels which were called Losh's patent, he, this deponent, asked the defendant whether his wheels were not like Losh's patent, and whether he was safe in making such wheels; and the said defendant said that he had a patent, and Losh had no patent: that the said plaintiff called on this deponent just before Easter respecting some wheels, about which a correspondence had taken place between deponent and the said plaintiff, till which time this deponent did not know the said plaintiff; and this deponent, in the course of conversation, asked plaintiff whether he had a patent, and further informed him what he had seen at the defendant's factory; that he has, in the month of June last, read and examined the specification and drawings enrolled to a patent, granted the 31st day of August, 1830, to William Losh, of Benton House, in the county of Northumberland, Esq., the above-named plaintiff, and has made himself well acquainted with the invention therein described, and considers the invention to have been new at the date of the said patent, and that the invention is of the greatest utility in the working of railway carriages: that the wheels made by the defendant differ in a very slight degree in the workmanship from those described in the said plaintiff's specification, but they do not differ in principle of combination, the spokes being made of wrought-iron turned over or bent at the ends to the curve of the intended wheel, and have proper railway tire shrunk on, which combination constitutes a main feature claimed in the specification of the plaintiff, the naves of defendant's wheels being affixed to the spokes by running melted iron into moulds: that the chief difference of the workmanship of the defendant's wheels, is, that the apex of each of the triangles produced by the ends of two spokes in defendant's wheel is welded, as at A, in fig. 1; whereas the like ends of the plaintiff's spokes as described in his specification, and as made under

Losh v

the said letters patent, are not welded together, but are separate, and the nave of iron is run on and cast.

Affidavit of *William Carpmael*, of Lincoln's-inn, in the county of Middlesex, civil engineer.—Saith, that for the last ten years and upwards he has been extensively engaged in advising inventors as to new combinations of machinery, and in respect to new inventions, and is well acquainted with the various constructions which have been used on railway carriages: that he has examined the specification of William Losh, enrolled to a patent granted by his late Majesty bearing date the 31st August, 1830, and is well acquainted with the invention therein described and explained; and this deponent has read the affidavits of Robert Jefferys and Samuel Hough, made in this cause, and has examined the drawing marked A, and also the model marked B, produced and shewn to this deponent at the time of making this affidavit; and this deponent is of opinion that the invention described in the said specification of the plaintiff was at the time a new invention, and of the greatest importance to the working of railway carriages: that the turning or bending the end of the wrought-iron spokes, of which the wheel is to be composed, into curves or bends of the figure of the intended wheel, and thus producing, by means of bars of wrought-iron, the spokes and inner ring or felloe of the wheel, and then shrinking on flanched railway tire, is a very important feature of novelty in the invention, and is claimed as a new combination in the plaintiff's specification: that the defendant's wheel as explained in drawing A, and described in the affidavits of Jefferys and Hough, varies only in the workmanship, particularly at the part or apex, *a*, where the ends of two spokes are welded together, and the two ends so held are secured in the nave. Whereas in the plaintiff's wheels as made under the patent, the ends similar to *a* are not welded: that the bars of wrought-iron of which the spokes of the defendant's wheels are composed, are bended and curved to the form, and become the inner ring or felloe of the wheel, on to which the railway or flanched tire is shrunk in the same manner as is described by the plaintiff; that to the best of his judgment the making of such wheels as are described in the drawing A, is a direct infringement on the plaintiff's patent.

Affidavit of *Samuel Hough*, of Crawford's-passage,

Hague

Clerkenwell, in the county of Middlesex, smith and iron founder.—Saith, that at the request of the plaintiff he called at Cable-street, on or about the 29th day of March last, and on going into the yard and premises of the defendant, he saw several men bending bars of wrought-iron into the shape represented by the model marked B, now produced and shewn to this deponent, which model was made by this deponent subsequently to seeing the process at the defendant's factory: that he saw many wrought-iron wheels made up of spokes curved and bent from bars of wrought-iron into the model marked B, and with suitable railroad or flanched tire of wrought-iron: that he is well acquainted with the wheels made by the plaintiff, having examined several of such wheels, by virtue of a patent granted 31st August, 1830: that he is of opinion that the wheels made by the defendant are constructed upon the same principle as those made by the plaintiff by virtue of the said letters patent.

Further affidavit of *William Carpmael.*—Saith, that he has read the specification of Thomas Paton, and also the specification of Losh and Stephenson, neither of which contain the combination claimed by plaintiff's patent. The invention of Losh and Stephenson in respect to railway wheels consists in applying a wrought-iron tire to cast-iron wheels, and in applying wrought-iron rings or felloes to wrought-iron spokes set in cast-iron naves. And the wheels described in the specification of Thomas Paton are not suitable, and could not be used on railways without materially altering their construction and combination, and applying new parts; and the making such wheels would not be an infringement of the plaintiff's patent, neither would the making of the wheels described in Losh and Stephenson's specification be any infringement. In neither of these specifications is there any description of a railway wheel made, or combined, by bending the spoke in such a manner as to form an inner ring, and shrinking on railway or flanched tire.

Affidavit of *George Cottam,* of Winsley-street, Oxford-street, manufacturing engineer.—Saith, that he has read the specification of Losh and Stephenson, and that of Paton; that he is well acquainted with the wheel described in the plaintiff's specification; and, to the best of his belief, the combination of parts in the construction of railway wheels, had not been practised before the date of

Losh

the patent. That the combining wrought-iron spokes, turned or formed into curved projections, producing the inner ring of the wheel, and shrinking on of flanched or railway tire, was a new and very important combination of parts, and constituted a great improvement in railway carriage-wheels, rendering them suitable for obtaining high speeds without danger; that it is a great improvement on Losh and Stephenson's other patent wheels, composed of cast-iron naves wrought into spokes, and cast-iron felloe shod with wrought-iron flanched tire; for although the latter were better than the wheels in previous use, the cast ring, or felloe, were liable to be broken by the shocks to which railway carriages are liable. That from the nature and construction of Paton's wheels as described in his specification, they are in no way adapted for railway carriages, and could not be used thereon, without great alteration and improvement in their combination. That the wheels manufactured by the defendant are on the same principle of combination as is described in fig. 6, in the specification of the plaintiff's patent, viz., the bending of bars of wrought-iron into sections, and shrinking railway tire thereon; and is, to the best of this deponent's belief, a direct infringement upon the plaintiff's patent.

Affidavits on behalf of the Defendant.

Joint Affidavits of *John Hague*, of Wellclose-square, engineer and millwright; *William Alltock Summers*, of Mill-place-row, engineer; *William Millar*, of New Crane Iron Works, Wapping, engineer, and *George Mills*, of Burr-street, St. Catharine Docks, engineer.—Say, that iron wheels for carriages have been a long time in use; that in 1808, a patent was granted to Thomas Paton, for certain new improvements in the construction of wheels for carriages;*

---

* The specification was as follows:—

" To all to whom these presents shall come, &c., &c.—Now know ye, that in compliance with the said proviso, I, the said Thomas Paton, do hereby declare, that the novelty of my invention of improvements on wheels is described as follows, in and by the drawings hereunto annexed (that is to say):

" First, that instead of making my wheels of wood, as has been generally done heretofore, I make the stocks or naves of wrought-iron lined with steel in the inside, or of bell-metal, hard brass, gun-metal, or of cast-iron, with or without steel bushes inside, or even of cast-steel.

" Second. In the wrought iron stock or nave, in place of wood spokes as in wheels in general, I insert spokes made of wrought iron, or any other metal not liable to break with a sudden jerk, by wedging, screw-

Hague

that they have carefully read the specification of this patent, and the description of wheels therein described

ing, keying, or by turning the end of the spoke to fit the hole in the nave exactly, and drilling holes through both nave and spoke, to receive a transverse pin to prevent their coming out.

"Third. In the least iron bell-metal, gun-metal or least steel naves, I fix the spokes in the same way, but have also another method, which is by laying the spokes in the mould and running the metal round them, which is much sooner done.

"Fourth. In the least iron naves I fix the steel bushes by wedging or by putting them in the mould and running the metal round them; the same may be done with the bell-metal, &c.

"Fifth. I make the felloes, or the external circle that the tire fixes on, of iron or other metal, and make them and the spokes of one solid piece, or fix the felloes to the spokes with rivets, screws, and nuts, or any other way, as convenient; and when the wheel is wider than common, I put two or even three rows of spokes in the nave to receive them, or make them in one piece with the spoke, with brackets on each side projecting from the side of the spoke to the edge of the felloe. My next improvement is a contrivance to keep the oil in the bushes, which I do by two methods,—

"First, by putting a ring of leather on the backside of the nave, with a ring screwed on behind it, that shall project against the inside of a collar which I put upon the shoulder of the axle-tree or arm, with the inside of it turned perfectly true, so that by constantly wearing against the inside of the collar it will prevent dirt from getting in or the oil from getting out.

"Secondly, by a ring of leather upon the outside or front of the collar of the axle-tree, to turn in and wear against the nave of the wheel, which will answer the same purpose; the advantages arising from the above improvements are to me evident: first, the great saving of valuable timber, and the great expense there is upon an article that is constantly in wear; and I am fully persuaded that one pair of my improved wheels, which will not rot if they lay by, and in common wear, accidents excepted, will last as long as six pair of best wood wheels, and cost little more than double, or at most treble the price.

"*Description of the Drawing.*

"Fig. 1, represents a wheel for gig, chaise, &c., showing the method for connecting the spokes to the nave of the wheel, when the metal is to be run round them, the cavities, *a*, are to fix the spokes more securely to the nave, the joint of the felloe at F, to show the dowell.

"Fig. 2, is a section of wheel and nave, *b*, with the axle-tree, *c*, showing the bushes, *d*, made of cast-steel, bell-metal, hard brass, gun-metal, or of cast-iron run round them in the mould, or fixed in by wedging, keying, &c. The first mode for supplying the bushes with oil is to have a box, *e*, screwed to the nave of the wheel to contain the oil, then to have a ring of leather, *f*, on the backside of the nave, with an iron ring, *g*, screwed on behind it, that shall project against the inside of the collar, *h*, and by constant wearing it will prevent the dirt from getting in and the oil from getting out.

"Fig. 3, is two views of the poke and felloe by itself, which may be of one solid piece or fixed to the felloe with rivets, screws, and nuts, or

Losh

is, in all material and effective parts, the same description of wheel set forth and claimed in the plaintiff's specification, save that the carriage-wheels described by Thomas Paton were not wheels for carriages for railroads, but for carriages generally; that the defendant has not hitherto made or manufactured any wheels for carriages to be used on railways, according to the forms of figs. 1, 2, 3, and 4, claimed by the plaintiff. The deponent, John Hague, admits that he did manufacture wheels according to the drawing deposited in Court by the plaintiff, that he made fourteen sets of them, and that he has sold and delivered four sets of such wheels; and he contends that he was legally justified in making wheels according to that drawing, inasmuch that the plaintiff has not in his specification described an entire triangular spoke, welded together at the end, as is described and shown in the said drawing. And the deponents, William Alltoft Summers, William Millar, and George Mills, say—that the wheel made by the defendant is not in any manner described or claimed by the plaintiff in his specification to the patent, and is in all parts of a different construction to any or either of the wheels described in the specification of the said patent.

Affidavits of *James Long*, of Christ Church, Surrey, practical engineer, and *Luke Embleton*, of Park-street, Southwark, practical engineer.—Say, they were formerly in the employ of Thomas Paton; that they made iron-wheels according to his patent, while employed by him; that the said wheels were made with wrought-iron spokes and

---

any other most convenient way. The tire or exterior ring to be fixed to the felloe with rivets, or screws and nuts, &c.

"Fig. 4, represents a dray-wheel with a double row of spokes, which can be made a broad-rimmed waggon wheel by another row of spokes, if wanted to widen the wheel. The spokes are represented as round, tapering, let into the nave, and fixed by a transverse pin passing through both, as may be done by the metal run round them, as before described.

"Fig. 5, is a section of the wheel with tapered axle-tree, *a*, and bushes, *b*, made of either of the metals already mentioned, and is represented as keyed, but may be done any other convenient way.

"The second mode for supplying the bushes with oil, is by a leather ring, *a*, on the outside collar of the axle-tree, to turn in and wear against the nave of the wheel, the leather to be fixed by an iron ring round it.

"Fig. 6, 6, is two views of the spoke and felloe, which may be done as before described.—THOMAS PATON."

Hague

felloes, and cast-iron naves; that they have read the specification of the plaintiff's patent; that the wheel described in fig. 5, is in all material and essential parts a construction of precisely the same description of wheel, as the wheels manufactured and sold by the said Thomas Paton, except that the wheels so made by Paton had wrought-iron hoops, or tires, instead of flange-hoops or tires; that the wheel made by defendant is not in any manner described or claimed by the plaintiff, in the specification of his patent, to be a part of his invention, but is, in all its parts, of a different construction to any of the wheels described in the specification of the plaintiff.

Affidavits of *John Ritson* and *Matthew Mann*, practical engineers, in the employment of the defendant.—Say, the wheels made by the defendant, are in all their parts different in construction to any of the wheels described in the plaintiff's specification.

Affidavit of *William John Curtis*, of Deptford, Engineer.—Saith, that he has carefully examined the specification of the plaintiff's patent, that the wheel made by the plaintiff, as exhibited in the drawing deposited in this Court, is not in any manner described in the specification of the plaintiff.

Affidavits of *John Braithwaite* and *John Ericsson*, of Paddington, Civil Engineers.—Say, that they have examined the specification of Paton's patent, and that the mode employed by plaintiff, as set forth in the specification of his patent, is essentially the same as the invention of Thomas Paton. That the spokes of the plaintiff's patent form the principal feature of his invention, since he shows no other mode of fixing the spokes to the rim of his wheel, than by such return or bending of the spokes, that he claims the fixing the spokes by means of the prolongation or double elbow-pieces, as part of his invention. That it appears by the drawing of Paton's specification, he fixes the spokes in a similar manner. That the next important feature of the plaintiff's claims in his specification is that of attaching or uniting the returns or bends of the spokes to each other, so as to form a continuous ring independently of the tire of the wheel. That, by the drawing, fig. 4, in the specification of Thomas Paton, the return or bends of the spokes are also attached and connected to each other, by which a continuous ring is also formed independently of the tire. That they are of

Losh v.

opinion that the invention claimed by the plaintiff is the same thing as that for which Paton obtained a patent, and would be an infringement on that patent if it had not expired.

Mr. Knight.—In applying to your Honour for an injunction against the defendant in this case, I would observe, that it is established by the evidence, and there is no controversy on the point, that the plaintiff has been ever since the granting of his patent in 1830, in the uninterrupted possession of his invention till the recent infringement of the defendant, and, in the language of *Lord Eldon* in *Hill* v. *Thompson*,* and other cases, it is the habit of the Court to give credit to the validity of the patent after possession of such a duration. Sir, the patent, as your Honour has been informed by the notice of motion, is for certain improvements in the construction of wheels to be used on railways. According to the old construction of railway carriage wheels, they were made of cast-iron, which was brittle and not adapted to very extreme speed, on account of their liability to break. A patent was taken by the plaintiff and an engineer of the name of Stephenson as early as 1816, for introducing wrought-iron spokes, or making the wheels and spokes of cast-iron, with hoops or tires of malleable iron. The patent now in question was granted in 1830, and the object was to obtain the full benefit of the application of wrought-iron in the whole composition of the wheel except the nave, which continues to be made of cast-iron; the spokes at the end next the tire were made of what is called elbow-bends, that is, the spoke is turned up at the end, and two spokes with the elbow-bend between them form a triangle, the elbow-bend being fastened upon the inner rim of solid iron, which answers the purpose that felloes answer in the ordinary wheel, but is here of solid iron; they are compacted to that; on the outside of which again is shrunk the tire so as to form a complete solid wheel of wrought-iron, of a better and stronger description than had ever before been attained by any former man. [The Learned Counsel then proceeded to read the several affidavits filed in the cause.] I have now read to your Honour the whole of the evidence, and am anxious again to call your attention to this, that the exclusive use by the plaintiff of his invention

---

* Vol. i., p. 369.

Hague.

ever since the granting of his patent, the great utility, the great expenditure, the great profit derived therein, its great importance on railways, are nowhere attempted to be met by any one of these affidavits; you have, therefore, a case of enjoyment for seven years under these letters patent confessed. Mr. Hague himself substantially, in terms, admits that his wheels are invasions of figs. 5 and 6. And what does he say? He says he has never made wheels according to the drawings, 1, 2, 3, and 4; does he say he never made any according to figs. 5 and 6? He says that he has ceased to make wheels according to the drawing A, which we say is an invasion of our fig. 6. Now, Sir, the defence, your Honour will observe, consists of two parts: the one relates to want of originality in the plaintiff's invention, by reason of the patents of 1808 and 1816; that is the first line of defence; the second is a denial of the invasion. I say the invasion is admitted, and supposing it admitted or established, that, taking into consideration the fact of the patent having been undisturbed for seven years, your Honour will grant the injunction. With regard to Losh and Stephenson's first patent, we may fairly throw it out of the question. But with regard to Paton's patent, if your Honour considers the validity of the present patent, it will require a somewhat closer attention. In the first place, Paton's patent is not applicable to railways, it is simply for common roads; in the next place, felloes will not do for railroads, for if once the tire gives, the wheel comes to pieces;—that will not do for railways, as the rapidity or concussion would destroy them. The peculiarity of Paton's patent was, that he made the felloes of his wheels of iron instead of wood. But the defendant says that Paton's patent had a sort of elbow-bend, that is, that they had lateral prolongations at the terminations of the spokes; to a certain extent they had, but for what purpose? For fixing a circular rim into a solid iron hoop; not for fastening the spokes to the felloe, which itself was placed within the tire. Paton's patent therefore retained the felloe, the spokes were fixed into the felloe, the felloes were made of iron instead of wood; but still a series of felloes composed the wheel, and were placed within the tire: and those lateral prolongations at the end of the spokes were not used for the purpose of fastening the

Losh

spoke within the solid rim of iron, whether double of the tire of the inner rim or single of a thick rim, to answer the purpose of both, but simply a mode of fastening the spoke into the felloe, which itself was laid in the inner rim. In the last affidavit of Mr. Carpmael, which I have read to your Honour, he clearly defines the difference in the combination of Paton, and Losh and Stephenson's wheels, and that of the plaintiff's; and concludes by saying, that in neither of such specifications of Paton and Losh and Stephenson, is there any description of a railway wheel made or combined by bending the spokes in such manner as to form an inner ring, and shrinking on railway or flanched tire. I need not remind your Honour that the word "combination" is absent from the affidavits on the other side as well as the word "principle." On the evidence which I have read I hope your Honour will not expose the plaintiff, who has embarked so large a capital in his patent, and has been in the enjoyment of the benefit of it for seven years, to the invasion to which he has been subject, and to which of course he will be again subject by the proceedings of the present defendant. Upon the fact of the infringement it would be unreasonable to make a suggestion, even in argument, that any doubt exists; it is established beyond all possibility of rational doubt. The only other question is, whether the validity of the patent of 1830 is successfully questioned? If there were any appearance of colour against it, the date of the patent and the enjoyment under it unquestionably would prevent the Court now from doing otherwise than giving credit to its validity and protecting the plaintiff. In point of fact, when the matter comes to be examined and thoroughly understood, neither the patent of Paton, or of Losh and Stephenson, for reasons which have been suggested to your Honour, does in the slightest degree interfere with the originality of this patent; therefore, if your Honour had to decide on that patent (which you have not), that is the conclusion to which you must come, especially in a case where the fact of infringement is not denied. It certainly appears to me, under correction, that a clearer case was never brought before a Court of Equity for the interference of the Court, and I trust your Honour will protect the plaintiff in the enjoyment of his patent right.

Hague.

Mr. Purvis.—Sir, I am with *Mr. Knight*, and after the manner in which he has gone through the affidavits, I have very little to add to what has been said by him; I will merely address a few words to your Honour on the supposed invalidity of the patent, that is, upon the patents of Paton, and Losh and Stephenson. The first improvement appears to have been with reference to railways, as to which a solid cast-metal wheel was first adapted; that cast-metal wheel when horses alone are conducting waggons and carts along railways was sufficient for the purpose; but when greater speed was obtained by the introduction of the steam-engine, it was found that such wheels were very liable to break. To obviate this Messrs. Losh and Stephenson, in 1816, took out a patent for a wheel, in which there was the outer rim cast with holes to receive the ends of the spokes; those holes were dovetailed, that is, they were narrower at the exterior than at the interior. The spokes having been formed of iron were then introduced, and then the outer rim was laid into a mould, and a nave of cast-metal was cast on the inner end of the spokes. The result of that was, that the cast-metal coming in a hot form on the inner end of the spoke had the effect, when it shrunk, of drawing the spokes tight on, so as to bring the dovetailed ends tight against the rim which was at the outside. This invention was only partially successful, and a further improvement was to put a malleable iron hoop round the cast-metal hoop, the result of which was, that it prevented the cast-iron hoop from breaking so suddenly as it had done before; and even if the cast-metal work crack, there would be still the outer tire of malleable iron that would protect the wheel. Paton's invention was simply substituting for every part of the wooden wheel as it was constructed in ordinary carts and carriages,—simply putting iron in the place of wood; but it was not adapted for railway carriages; he never intended to adapt it for railway carriages; he never had an inner ring; he never had a complete inner circle, on which the outer circle could be shrunk so as to keep the wheel all together; what he claimed a patent for, was simply to make a wheel of iron; he says:—"I make the felloes, or the external circle that the tire fixes on, of iron or other metal, and make them and the spokes of one solid piece, or fix the felloes to the spokes with rivets, screws, and nuts." Now, what the plaintiff

Losh

claims as his invention, is the turning or bending the ends of the wrought-iron spokes of which the wheel is to be composed, into curves or bends of the figure of the intended wheel, and thus producing, by means of bars of wrought-iron, the spoke and inner ring or felloe of the wheel, and then shrinking on a flanched railway tire. I submit there is nothing in Paton's patent, or in Losh and Stephenson's former patent, that interferes with this invention of the inner rim.

Mr. Jacob.—There is one point which has been adverted to by my friend who has just sat down, that he was about to do that which it is obviously the policy of his Learned Leader not to do; namely, to give the Court some idea of Paton's specification, beyond that which could be conveyed to the Court by mere oral description, an allegation of what that specification contained, and what that patent was. I would observe that this motion would never have been made, but for the circumstance of Mr. Hague having received an extensive order from the London and Birmingham Railroad Company, for a number of wheels,—not for wheels according to plaintiff's invention, but for an invention which he has recently patented; for he knew before these proceedings commenced, that the manufacture of the wheels of which he complained as being an invasion of his patent was discontinued; but his object in applying to the Court was to have the *éclat* of having obtained an injunction against Mr. Hague, and by that means preventing his executing any order he might obtain from the Company, for manufacturing iron wheels, which the plaintiff wishes to be understood as having an exclusive right to manufacture. Sir, there is an affidavit by the plaintiff, in which it appears that the plaintiff himself stated, that what he claimed was the making of a wheel of wrought-iron, all wheels of wrought-iron, and thus he considered he got a patent for making wheels with wrought-iron. Now, Sir, from a considerable portion of the argument which you have heard from my Learned Friends on the other side I should have collected, that they may have taken a view something similar to that of the plaintiff; and those who have made affidavits for the plaintiff seem to be of the same opinion. It is said that the difference between Messrs. Losh and Stephenson's patent, and that of the plaintiff, is, that, in the former, cast-iron ne-

Hague.

cessarily formed the rim of the wheel, which rim was either of wrought-iron or not, as described in the specification, whereas in the latter the very principle of construction is, that the cast-iron of the rim should be done away with, and a rim of malleable iron exclusively substituted, whereby the risk and danger arising from the liability of cast-iron to breakage are obviated; from which the Court is led to suppose that the invention consists in the substitution of wrought-iron for cast-iron. Then there is the affidavit of Mr. Cottam, who swears, that he believes the invention of the plaintiff to be a new combination of parts in the construction of railway wheels, and that the combining wrought-iron spokes turned or formed into curved projections, producing the inner ring of the wheel, and shrinking on of flanched or railway tire, was a new adaptation and combination of parts, which, though the parts in themselves were not new, they produce, as newly combined, a very important improvement in railway carriage wheels. Now I call your Honour's attention to this, because I shall be able to show on this affidavit that the scientific gentlemen who have looked at the plaintiff's specification are perfectly aware that that which is the real point in this patent is not new; and were this a patent taken out for something which turns out not to be new, then the endeavour always made, is, to support that patent by abandoning the novelty of each part, but by alleging that there is a novelty in the combination of the whole. I mention Cottam's first, because he is a great deal more candid, and says the parts themselves are not new; he describes it as a new combination of parts, in the construction of railway wheels, which had not been before practised. Then, he goes on to describe what he supposes the combination to be, for which the patent is taken out. That the combining wrought-iron spokes, turned or formed into curved projections, producing the inner ring of the wheel, and shrinking on of flanched or railway tire, was a new adaptation and combination of parts, which, though the parts in themselves were not new, they produce, as newly combined, a very important improvement in railway carriage wheels. The shrinking on of flanched tire, or any tire, was, as your Honour will observe from the evidence and specification, a well-known and old practice. We have found and proved,

Losh v.

that the making of the wrought-iron spokes turning in this way, into curved projections, and the making the spoke, and part of the felloe of one piece, that was old, although the patent is taken out for that. Then the way in which it is attempted to be supported is this, by saying, although this plan of making our spokes, and parts of the felloes, is not new, for Paton had it before, yet it is a new thing now to combine a wheel made of spokes, where the felloe and spokes are in one, with the practice of shrinking on the outer tire; that is what is stated here in this affidavit, and what your Honour will have to consider will be, whether, supposing we make out that Mr. Cottam is right in thinking that the parts themselves are not new, whether this is a patent for any combination of old parts, which can be supported in that way. Sir, in Mr. Carpmael's affidavit there is a similar phraseology; in one of his affidavits, made on the 28th July, Mr. Carpmael says,—that the turning or bending the end of the wrought-iron spokes, of which the wheel is to be composed, into curves or bends of the figure of the intended wheel, and thus producing, by means of bars of wrought-iron, the spoke and inner ring, or felloe of the wheel, and then shrinking on flanched railway tire, is a very important feature of novelty in the invention, and is claimed as a new combination in the plaintiff's specification. He does not venture to say, and cannot say, that the turning or bending the end of the wrought-iron spokes, of which the wheel is to be composed, into curves or bends of the figure of the intended wheel, and thus producing, by means of bars of wrought-iron, the spoke, and inner ring, or felloe of the wheel, that that is a novelty; he cannot say that, and therefore the only way that it is endeavoured to be supported is, by saying, that, taking Paton's old spokes, and then shrinking round on the old plan, is a new combination; and then there is added, what I think the Court will find the specification does not support, that it is claimed as a new combination in the plaintiff's specification; there is no such claim in that specification. Then, Sir, there is another affidavit of Mr. Carpmael, in which he says,—that in neither of such specifications of Paton, and Losh and Stephenson, is there any description of a railway wheel, made or combined, in bending the spokes in such manner as to form an inner ring, and shrinking on railway or flanched tire. Now, that is, as your

Hague.

Honour observes, the way in which the scientific gentlemen on the part of the plaintiff are obliged to put the case. They find it is not a patent which they can support as an original invention, by making the spokes and parts of felloes in one, and therefore the attempt is to read this as a patent for a combination of the old mode of making spokes and felloes, and shrinking on the railway tire, and that there is a novelty in that. Now, with respect to patents for combinations, of course a party may have a patent for a new combination of old articles and known processes, but for that purpose it will be necessary he should state in his specification that the novelty which he claims is the novelty of combining those two things, two or more, whatever they may be, but further than this, it is necessary, if his patent be for a combination of things, that he must not so state those things in his specification as to make a claim, not only for a combination but for certain of the things themselves, which were previously known; that is what he must avoid, because *Lord Eldon* says, in the case of *Hill* v. *Thompson:* "On the other hand, there may be a valid patent for a new combination of materials previously in use for the same purpose, or for a new method of applying such materials. But in order to its being effectual the specification must clearly express that it is in respect of such new combination or application, and of that only, and not lay claim to the merit of original invention in the use of the materials." Therefore, if the case was that this was a specification claiming as an invention the combination of this species of compound spoke, the combination of that with the practice of shrinking on the tire, if it was a patent for that, which I shall show it is utterly impossible it can be represented as being, if it were so, then, still if he claimed in that patent a combination of that compound spoke with the practice of shrinking on, if he claimed the practice of combining those, then, according to what *Lord Eldon* said, his patent would be bad. If you have invented a combination take your patent for it, if you have invented new things, take your patent for that which is new, but do not in your patent claim more than that which you have invented. The Court will find, on looking at it attentively, that the specification of the plaintiff does not purport to be a patent for the combination of this species of compound

Losh v.

spoke with the practice of shrinking on the tire; it is no such thing, that is not what he claims at all; the practice of shrinking on the outer tire is spoken of as the common process, used by all persons in making wheels generally: it is the making of spokes and felloes in one, that is what his patent is for, and it is a mere afterthought for the purposes of this case. When it is found that that which he has claimed turns out to be old, then the attempt is made to say,—that may be old, but my claim is that I combine that with something else. There is no such thing on the face of the specification. Now we come to that part on which it is attempted to support the patent by alleging it to be a combination of that which I mentioned before with what is to come. Now let us see how that is explained: "the curved prolongation of the spokes when thus rivetted together at their several jointings form a circular rim, *p*, *r*, *q*, *s*, *t*, to the wheel around which the wrought-iron tire, T, that is to run upon the rails of the railway, is fixed by the same means as is usually taken for applying the hoop-tire on wheels of carriages;" this is the shrinking process. Now we come to the description. He takes care not to claim it as a novelty, claiming it as only that which "is usually taken for applying the hoop-tire on wheels of carriages, viz., the said tire is a circular hoop formed of a wrought-iron bar, rolled into the proper shape for travelling upon the rails, a proper length of such a bar is curved into a circle and the ends welded together, and the hoop being applied whilst hot around the circular rim, (made, as aforesaid, by the curved prolongations of the spokes,) the shrinking or contraction of the hoop in cooling firmly embraces the said circular rim and forms a strong and secure wheel. T, T, is the tire with what is called its crease, or flange, *f*, which is a rim projecting out on one side of the wheel beyond that part of the edge of the rim which is to bear on the top of the rails, in order that the flange may apply to the side of the rails and prevent the wheel running off sideways from the rails. The form of the flange, *f*, and of the external part of the tire, T, may be the same as commonly used, and the hoop or tire may be fastened on the rim formed by the prolongations of the spokes, by conical pins put through the tire and the said rim, in a direction pointing towards the centre of the wheel."

The Vice-Chancellor.—The flanges upon the wheels

Hague

are disused now, they generally make the wheels without the flanges.

Mr. Jacob.—I cannot say.

Mr. Richards.—On the new sort of railways they are always made with the flanges.

Mr. Jacob.—At present the fashion is to make the railway of a single plate, and you are obliged to have something to prevent the carriages from going off on one side.

The Vice-Chancellor.—You must either have the flange on the wheel, or a side to the rail. How is it on the Manchester and Liverpool Railway?

Mr. Richards.—There are flanges on the wheels, and I believe it is so on the Birmingham and Liverpool too.

Mr. Jacob.—Now, Sir, this is the end of the description of figs. 1 and 2; fig. 1 being the mode of doing this, fig. 2 being a section of it. On looking at that description of fig. 1, what is it that he is there claiming? and what is it that his invention is? Why his invention is the making the wheels with these elbow-bends.

The Vice-Chancellor.—That is the substance of it.

Mr. Jacob.—And if that is a novelty is it the subject of a patent? But one knows that it is impossible to represent this as a patent for a combination of old parts, but does he tell you that the operation, so as to turn those curved prolongations into felloes,—does he tell you that that is new? No, very properly he says, I do not claim that. Is it the shrinking operation of fastening on the outer tire? I claim not that. The cast-iron nave. He tells you, very properly, he does not claim that, that is to be done in the usual way. What is it he claims? what is it he gives you as the very patent? Making the curved prolongations, and that is what this is a patent for, or it is a patent for nothing. Now I go to fig. 5, which is the second plan of this wheel.

The Vice-Chancellor.—As I understood it, the figs. 1, 5, and 6, merely are different modes of representing the elbow-bends.

Mr. Jacob.—They are different modes of effecting this object, by making a fraction of the felloe and the spoke one; and there are two or three ways of doing it, one is by making the prolongations overlap, another by welding them together at the end by varying the form, and the form in fig. 5, varies a little, because at the joining points

Losh v.

the material is made a little thicker; there is a little variation in that. Now in fig. 5, there is a slight variation, therefore, he says that would be most convenient for welding them to the rim. A circular ring of wrought-iron, of the proper diameter, is then made, and spokes are welded to it, and then he says all the spokes may be welded to a bar of wrought-iron. Now, Sir, the purpose for which I call your attention to that is this, that in that description of fig. 5, which forms a complete thing itself, there is nothing about the making of these prolongations or the mode of arranging them, and there is nothing here about shrinking on the outer tire: there is no reference to that combination, nor is there anything to make it essential that the iron should be shrunk on; that is not what he claims. Now, Sir, I ask this: supposing there was a person who chooses to make a wheel according to fig. 5, but instead of having the outer tire shrunk on, chooses to have it nailed on, or rivetted on, or welded on, —would it not be perfectly clear that the making that wheel, fig. 5, with the outer tire welded on, or nailed on, would be a plain infringement of this patent, supposing the patent to be valid, because he would say, You have taken the whole of my fig. 5, you have taken every part and every piece of it, and you have welded on the outer tire; but my fig. 5 does not depend on the shrinking on the outer tire; my invention is that fig. 5, putting on a tire or no tire, or putting on a tire in any way you please. If you have taken that, that is my invention, and therefore it is impossible to represent this as is sought to be done by the affidavits in support of the patent, which represents it as a combination of the old plan with this in it. Now, Sir, the next is fig. 6, and is the one which is more immediately in question, being the one which they say we have adopted. Now what he describes here in the first place is that the spoke is to have a prolongation. "Or the overlap at the ends of the spokes, where they meet, may be welded together, as at c, a mode of junction which will add much to the support of the tire; or the bar of which each spoke is formed may be bended with two elbow-bends, the middle part between those two elbow-bends forming a portion of the circular rim, and the two ends of the bar being straight, so that each bar forms a sector of a circle" (like a triangle). Sir, I would call your Honour's attention to this also, that there is another

Hague

distinction which it is right to make on this patent, that it is a patent for three particular modes of making compound spokes,—a spoke and a felloe in one, which are there described. It is not a patent which claims generally all and every mode by which spokes can be made of one piece with the felloe; that is not the nature of the patent; but it claims the three particular modes of making spokes and felloes in one, or making a compound felloe, and not all the modes. Here are three pictures of figures of wheels so made,—suppose the patent is good, it would give him the right to what is described in those three figures; but if anybody else should invent a fourth figure, with a different mode of arriving at the same result, that is a different figure, differing as much as fig. 5 differs from fig. 6, or fig. 1 from fig. 5, and that person would have a right to use it; but he does not state the general use or claim of compound spokes as an invention of his own, but he states those three particular plans. Now, Sir, this is the nature of the patent, and the question is, whether this patent is one which can now be supported? Sir, when this case was on yesterday, no reference was made to any former patent of Paton, but that patent we have produced. Sir, the patent that Paton took in the year 1808, was for an invention of certain new improvements in the construction of wheels for carriages. It was not certainly of wheels for railway carriages, or for gigs or barouches, but for carriages generally, including therefore railway carriages,—including every kind of carriage which goes upon wheels. And the invention was for the making of wheels; that invention of Paton's was applicable to the wheels of a chaise or a gig.

The Vice-Chancellor.—I must say I cannot make out that Paton's patent at all resembles the plaintiff's patent; it appears to me to be quite a different thing.

Mr. Jacob.—Part of it is.

The Vice-Chancellor.—What I mean is, that Paton's does not profess to be a patent for that thing which is emphatically claimed by the plaintiff, namely, the making the spokes and the rim or part of the rim of one piece.

Mr. Jacob.—Perhaps your Honour will allow me to hand this up to you. "Fig. 3, 3, is two views of the spoke and felloe by itself, which may be of one solid piece, or fixed to the felloe with rivets, screws, and nuts, or any other most convenient way. Fig. 4, represents a dray-

Losh v.

wheel, &c. Fig. 5, relates to the invention of a bush. Fig. 6, is two views of the spoke and felloe, which may be done as before described." Now your Honour will see in Paton's specification the plan of making the spoke and a portion of the felloe, out of one piece of iron, is distinctly stated. He says: "I make the felloes or the external circle that the tire fixes on, of iron or other metal, and make them and the spokes of one solid piece." Now the way in which that is done, is more clearly explained upon these figures, fig. 3 and fig. 6, for there you have in fig. 3, and also in fig. 6, the spoke, with the curves on each side of it, forming a portion of the felloe. What is that but the fig. 6, which the plaintiff has described? There you have in fig. 6, the spoke in the middle part going out on each side, which forms a portion of the inner tire or the felloe, and those two prolongations meet together, and so form that inner tire or felloe. The novelty of the supposed invention was in making part of the felloe also a part of the spoke; that is the novelty, and that is the point of the specification of Mr. Losh; it is plain that that is the idea and the principle of it, but it is a principle which is old, which Paton had, and which he gave the pictures for, showing, as plainly as anybody could, how this was to be done. From whence Mr. Losh gained the idea, I do not know, but I see no statement that he was not aware of Paton's patent. That they were not only so made, but that it was acted on accordingly, and put in practice long before, appears from some portion of the evidence that we have adduced. I do not know where they were used, except it was on the railway in the East India Docks, and in what is called the Commercial Road, where they carry the goods. Whether it was for that or not, I do not know. The affidavit of Long and Embleton states—"they have this day read the specification of the patent granted to the plaintiff, and the drawings referred to in such specification." They say that "the wheel described in the said specification at fig. 5, is, in all its essential and material parts and construction, precisely the same description of wheel as the wheels manufactured and sold by Paton, during the time these deponents were in the service of Paton, except this, that the wheels so made by Paton had wrought-iron hoops or tires, instead of flange hoops and tires." If they were made for the common roads or the old-

Hague

fashioned tram-roads, they would not require the flange, but would be plain, so that these persons state explicitly and plainly that that is the mode in which the wheels have been made. Sir, here is the affidavit of Messrs. Braithwaite and Ericsson, which states that they are decidedly of opinion that the plaintiff's supposed invention or improvements are similar to the inventions of Paton, and if the patent so granted to him, Paton, had not already expired, would have been a direct infringement of the said patent. Now, I think, of that your Honour cannot entertain the slightest doubt, neither can you entertain any doubt that if Paton were alive and in business, and was making at this day wheels on the plan which he gave you the figures of in the year 1808, with those double elbow-bends and spokes formed into one, if he was now to take up one of his wheels that he made thirty years ago, that would be a palpable infringement of the plaintiff's patent; if the plaintiff's patent is valid. Indeed, Sir, therefore, what I rather believe is, that it is in vain to contend, when it appears so plain what is the real point of that for which the plaintiff took out his patent,—it is in vain to contend that the compound spoke was the point, and in truth the scientific affidavits on the part of the plaintiff appear to me entirely to give up that portion of the case, and to rest it on the attempt to make out that his patent, though not new in its parts, may stand as for a combination. I think, in reading that specification, I have sufficiently shown to your Honour, that it is not a patent for a combination, and it is distinct in this; it claims three distinct modes of making those compound spokes, and it claims them as a subject of a distinct claim; and even if there was anything in the patent which could be represented as a patent for the combination of different things, still the fact of his claiming three things which are not new, would be sufficient to make it bad, if it were—what it is not—a patent for the combination. It is a patent for those three things, describing them as novelties, it being perfectly clear they were known and in use sixteen years, at least, before the date of his patent, and had been the subject of a patent which had previously expired. Upon this, Sir, I cannot help thinking that the case stands entirely clear on the invalidity of the patent that Mr. Losh has here obtained. Sir, my Learned Friend has referred your Honour to

Losh

cases in which it has been said, that where there has been under a patent, an exclusive enjoyment of a considerable duration, the Court is in the habit of giving, to a great extent, credit to that patent. I admit, Sir, that to a great extent it does. I admit that if it is proved that there has been what can be properly called an exclusive enjoyment under a patent, that is, the exclusive enjoyment of the manufacture of articles under that patent,—if you can show that, the Court will not enter very nicely into questions of validity or invalidity or other questions, where it appears that you have conflicting evidence; you would be disinclined to listen on the question of utility or inutility to conflicting affidavits, but I am not aware that if the case is this, that upon written documents, upon written records it appears, and is plainly proved, and in such a manner that the Court can entertain no doubt about it, that the patent is invalid, as in the case that is now before you, where you are not obliged to go to conflicting opinions, and where there is no conflicting fact, but where the thing rests on the writings of Paton's patent recorded in the office, and upon the drawings annexed by him to those writings; I am not aware that in that case any exclusive enjoyment, even if there had been what is properly called any exclusive enjoyment, that that would be a ground on which the Court would say it would look at that which it cannot look at, and that it would shut its eyes to that on which it can decide without the necessity of looking into the question of conflicting evidence. I apprehend the Court has before it clearly, that this patent is one claiming things which are old, and, therefore, it cannot stand. Sir, I have often observed in these patent cases, that one finds that the patentee is one of those who commonly uses his own patent the least, and we have continually cases coming here of persons asking for injunctions to restrain other people from using their patents, when it turns out they do not use them themselves, and you cannot make out what portion of their patent they do use. Mr. Losh, undoubtedly, has been from time to time making a very great number of wheels; but I would ask of your Honour, is there anything from which you can discover, whether the wheels he makes are according to fig. 1, fig. 5, or fig. 6, or according to some other figure? There is one discovery which has been made in the course of these

Hague

proceedings, namely, that in one important particular the wheels he generally makes differ from fig. 1, from fig. 5, and from fig. 6, because it appears from one of his own witnesses who has casually brought it out in pointing out the difference between his and ours,—one of his own witnesses—Jefferies, I think it was—says, and it struck the attention of your Honour, "there is this difference," he says, "that our spokes are straight, whereas the plaintiff generally has bent spokes," and there was in Court, I think, the other day the model of a wheel with bent spokes, which probably may be a model of one of those the plaintiff is in the habit of using. Now, Sir, in the plaintiff's specification you look in vain for anything with respect to bent spokes, and you look in vain in the drawing; they are all straight, nay, they are described as straight, for he describes them particularly in one part; in the description of fig. 6, they are described as straight parts made together, and the curved parts otherwise, and yet what he is in the habit of doing is making them bent, and his specification distinctly points out how to make the spokes, and he speaks of them as being all straight.

The Vice-Chancellor.—What is the supposed advantage of making the spoke bent?

Mr. Jacob.—I do not know.

Mr. Knight.—Mr. Carpmael tells me it rather increases the degree of elasticity.

The Vice-Chancellor.—But it diminishes the strength.

Mr. Jacob.—It must be weaker. In his description of that very thing which he alleges to be violated, he says, the bar of which each spoke is formed may be bended with two elbow-bends, the middle part between those two elbow-bends forming a portion of the circular rim; he describes them as straight, and the two ends of the bar being straight, now, what is his claim? His claim is only for those which he described—the straight bars, and the other bars are quite a different thing; I do not know how far it can be said his are made according to his patent, except in this, that I have shown your Honour, from his own statement, made to one of our witnesses, that there is a notion prevailing that he has got a patent for all wrought-iron wheels; if he thinks that, of course he may say when I make wrought-iron wheels, I make them according to my patent, and in truth his patent

Losh v.

does begin by speaking of wrought-iron wheels, but then it disclaims that as any novelty. In his affidavit he says he has expended 7,000*l.* and upwards, in constructing machinery to enable him to manufacture his said wheels; his patent has never been infringed upon, he has made a great many wheels, and he says this, that he has made wheels according to each of the plans and modes shown on his said specification, and that they have all been used and found to answer most effectually the purpose described by his said specification. Now, I confess, it would seem from this that there must be some other part of the specification according to which he makes no wheels whatever, and what I wish your Honour to understand is, what is the figure he means to represent himself as having been in use for the last six years; I have no doubt he is correct, and that he has made a great many wheels, no doubt of that, but how far he has been making them according to this specification it is impossible to say, for those persons who say he has made them according to this specification are so little aware of the contents of the specification as to imagine that the use of wrought-iron is a portion of his invention. Sir, supposing there was a question, which I do not think there is, about the validity of this patent, there would be another question, whether those wheels of which some few sets have been made by Mr. Hague are an infringement of that patent.

The Vice-Chancellor.—When Hague says in his affidavit he admits he did manufacture wheels according to the drawing stated by him to have been lodged with his clerk in Court, what particular drawing is that?

Mr. Jacob.—It is the particular drawing, *a*, which your Honour has annexed to the specification. According to that figure, your Honour will see there is a compound spoke, of which the felloe and spoke are partially the same, or rather the spoke and the felloe are of one piece. Now I have observed to your Honour that the plaintiff's patent did not claim all compound spokes, it is not a claim like Paton's; Paton says generally, "I make them of one piece," but that is not the plaintiff's claim, he claims for making these particular three kinds of compound spokes which are represented in figs. 1, 5, and 6, and he contends that this one here is the same as his fig. 6. Now, if your Honour will take the trouble of looking at our compound

Hague?

spoke, you will see the way in which that is made; it is, Sir, a complete triangle, that is to say, the sector of a circle, and the two straight bars come together, joining at a point of the nave; the two straight bars are then connected together, bent and extended into the nave, they are formed in that way, and then the nave is cast round, so that the two straight bars of the triangle are bent together, and they are there, as the witnesses say, welded together.

The Vice-Chancellor.—The nave end of your spoke is totally different.

Mr. Jacob.—Yes. The way in which it is done is this: these ends would be placed in this way and the cast-iron cast round, the consequence of which is that these two bars do not meet in the nave, but each has its cast-iron curving round, and that is the connexion together; but how is it here? It is quite different. Here the two parts come together, these two parts are welded together and bent so as to come in a straight line, whereby this part radiates towards the centre of the nave, and that gives it additional strength: but mark this difference,—you have the spoke much more compact and much more strong, because here each of the straight sides is supported by the other, they are both welded together and form one entire piece before the cast-iron nave is cast round; his is different, this was an idea that he had not acquired, it had not occurred to him, and the utmost he can say is, that ours is an improvement on his. But how has he claimed it? He has claimed it for three particular modes; he cannot claim it for all modes of making compact spokes and felloes in one piece, that would not be good. The utmost claim he can make would be a claim for those three particular modes. I think it is clear he cannot claim those, because Paton had before invented them all, but that is his principle, if he can claim these then he cannot claim any mode. I apprehend, therefore, Sir, if this patent is valid at all, the only way of supporting it would be by holding it to be a patent for those three united kinds of compound spokes, and ours is not one of them. I take it to be clear, therefore, on that, that it is not necessary for me to say more than to point out the distinction there is between those two modes of proceeding, a distinction which, I think, would be sufficient to prevent this from being an infringement, even if the patent

Losh v.

on which these proceedings are taken is good. Now, Sir, this is the nature of the case which is now before the Court; in argument, it is somewhat difficult to explain these things in such a manner as to make them intelligible to the Court, and I believe that difficulty partially arises from its being difficult to understand it so as to make it perfectly intelligible to one's self. One is often obliged to read over again a great part of the affidavits in order to give our explanation of that which has been given before. I think we have now placed this case in such a light, that your Honour will think it clear that this patent is an invalid patent, and the Court is fully at liberty to enter into the consideration of that question in the absence of any evidence of infringement, and will refuse this application which is now made.

Mr. Richards. — I am on the same side with *Mr. Jacob*, and after what he has stated I shall occupy your Honour but a short time. What Lord Eldon has stated in *Hill* v. *Thompson* is, that the party when he comes to the Court must state that the invention is a novelty, but my friend, *Mr. Knight*, would not be able to support the proposition in that case, which stated that Lord Eldon said, supposing we clearly and distinctly show to the Court that the invention is not novel, the Court will not interfere by injunction before the action and before the right is tried by an action at law. The first question for your Honour's consideration here is, whether or no the patent under which they claim the interference of the Court was, or was not, a valid patent? If we can show to your Honour that the invention which they claim was that which had been previously invented, and previously carried into effect by Paton, or those who claim under him, then I conceive it to be clear that your Honour will not interfere by injunction; more particularly will your Honour not interfere by injunction when you find that so far back as the month of March last they were aware we were doing that which they now complain of, namely, infringing their patent, and they do not make any application to the Court till four months have passed over, namely, in the month of July following, and they do not then apply to the Court, but they file their bill for the purpose of the injunction in question. Sir, with respect to Paton's patent being for the same purpose, that will appear to your Honour, I think, from reading the specifi-

Hague

cation of Paton, because, in cases of this description, in most instances, in deciding whether the patent is the same or not; but above all, when your Honour finds that their own witnesses do not deny that Paton's patent is the same as the one under which they claim, they do not deny that Paton's patent and the patent which the plaintiffs claim is the same, save and except that the flange is added to one which does not appertain to the other, and your Honour will find they attempt to shift their ground in these subsequent affidavits. They say that the patent of 1830, under which the plaintiff claims, is a patent for a combination, and consequently, is totally different from Paton's; the affidavits of the same individuals stating clearly and distinctly that the invention which the plaintiff claims was perfectly novel; and without going through the different parts which my Learned Leader has gone through, I would draw your Honour's attention very shortly to what they claim and what they disclaim; and I think I can show to your Honour when I hand up to you a model of Paton's patent—I think I can show that it is really obvious that the elbow-bend was an elbow-bend claimed by Paton and also used by him. The plaintiff claims the invention of having made the felloe and the spoke of one and the same piece of iron, namely, that there is an elbow-bend, and the iron being thus bent from the felloe of the wheel round which the tire goes. Now compare this with what Paton has stated in his specification.

The Vice-Chancellor.—I really do not know what he means; I do not know whether he means this—that he makes the spoke and the felloe of one solid piece, or whether he makes the felloe of different pieces, which pieces of the felloe are of the same pieces with the spokes. The drawing does not make it clear.

Mr. Knight.—If you read it as my friend wishes you to read it, it contradicts his own drawing.

Mr. Richards.—We will see. We will just refer to the drawing of Paton, but I conceive that the description here is clear and distinct. "I make the felloes, or the external circle that the tire fixes on, of iron or other metal, and the spokes of one solid piece." The consequence, therefore, would be, that the spokes and the part which forms the felloes being made of one solid piece must, of necessity, be made in the shape of an elbow-

Losh v.

bend—that will follow as a necessary consequence. Now let us see whether what *Mr. Knight* says is correct or not, with respect to the drawing. He gives you fig. 1, and he also gives you fig. 3. Now if you look at fig. 3, what he says is this: "Fig. 3, 3, is two views of the spoke and felloe by itself, which may be of one solid piece." Now that is fig. 3. What does he state there? He says that is the spoke and felloe; looking at it, your Honour observes it looks to be in the shape of an anchor. Now, looking at it in that way, it is impossible that the spoke and felloe can be in any other than one solid piece.

The Vice-Chancellor.—Really, on the figure he does not so describe it.

Mr. Richards.—If your Honour looks at the figure with reference to what he states, you find this: "3, 3, is two views of the spoke and felloe by itself, which may be of one solid piece of iron." He then states that the spoke and felloe here may be one solid piece of iron. He gives you a drawing of it, which appears in the shape now before your Honour. How is it possible that that can be joined at the top when he states that the felloe and the spoke are to be a solid piece of iron? If you couple this with the description which you find in the patent itself, I conceive it is quite impossible that it could be meant to be any other description than that the spoke and the felloe are to be in the shape of an elbow-bend—it only means making the felloe and the spoke of one and the same piece. If there is any inaccuracy in the drawing, that of course is capable of being corrected by the description found in the specification. The specification says, "I make them and the spokes of one solid piece, they fix the felloes to the spokes with rivets, screws, and nuts." Now, supposing we are correct in the view we have taken of the drawing and the description given by Paton in the specification, the next question is this—

The Vice-Chancellor.—It really appears to me that Paton might have meant to describe it as you say, but I do not think it can be so. As I understand, what the plaintiff says, in words, and what the plaintiff represents in his drawing is this,—that he makes the felloe and the spokes of any wheel in this way, that is, he makes the spokes in such a manner as that by the continuation

Hague

of the elbow-bend it makes a part of the felloe, and then by the junction of several spokes with elbow-bends, and therefore parts of the felloe, he does make a complete felloe of iron with some of the spokes; but the language of Paton seems to convey quite a different idea; he says this,—"I make the felloes, or the external circle that the tire fixes on, of iron or other metal, and make them and the spokes of one solid piece;" as if it was one solid piece which constituted the whole of the felloes and all the spokes; it is a very different thing. It might have been meant to represent what you say, but it does not appear to me to do so.

Mr. Jacob.—He meant to make all of one piece.

The Vice-Chancellor.—That the felloe and the spokes might be of one piece; but when you look at fig. 3, for instance, fig. 3 is so drawn as to represent the thing in parts.

Mr. Jacob.—In fig. 4 of Paton's specification the turns or bends of the spokes are also attached and connected to each other.

The Vice-Chancellor.—In fig. 4, there is just the same sort of blunder, he has in fig. 4, represented the felloes and spokes as of different pieces.

Mr. Jacob.—They are joined together.

The Vice-Chancellor.—I mean to represent this, that the spoke is a separate thing from the felloe; every spoke in fig. 4—to my eye it is as clear as anything can be, that every spoke is represented as distinct from every portion of the felloe. If it had all been meant to be represented as of one piece, there would have been no internal lines at all, there would have solely been external lines, but the introduction of the internal lines necessarily presents to the eye the notion that the pieces are separate.

Mr. Jacob.—We have made it out by the witnesses.

The Vice-Chancellor.—That I can understand, but it only comes to this; that he had a conception in his mind on which, when he was actually in his workman's garb, he could act, and make the spokes and felloes of one piece; but when he chooses to describe it in words, or describing it in the drawing, he describes a different idea.

Mr. Jacob.—His specification very likely was bad, but it is equally good for our purpose.

The Vice-Chancellor.—It may be so.

Losh v.

Mr. Richards.—Three or four lines lower down in his description, you will find it is described, that it was not intended to be "of one solid piece, or to fix the felloes to the spokes with rivets, screws, and nuts, or any other way, as convenient; and when the wheel is wider than common, I put two or even three rows of spokes in the nave to receive them, or make them in one piece with the spoke, with the brackets on each side projecting from the side of the spoke to the edge of the felloe." Now it is almost impossible to conceive that this description does not contain the elbow-bend. He says in the first part, that which I have already stated to your Honour,—he says, "when the wheel is wider than common I put two or even three rows of spokes in the nave to receive them, or make them in one piece with the spoke on each side."

The Vice-Chancellor.—What does the word *them* mean?

Mr. Richards.—That is alluding to the external circle which he had previously alluded to. If your Honour will look to the previous part it must be the felloes or external circle. "I make the felloes, or the external circle that the tire fixes on, of iron or other metal, and make them and the spokes of one solid piece, or fix the felloes to the spokes with rivets, screws, and nuts."

The Vice-Chancellor.—You see what odd language it is,—fix the felloes to the spokes, or make them in one piece with the spokes.

Mr. Richards.—That must mean the felloes, with great deference to the Court it cannot mean anything else. Now it is obviously not the nave, from this previous description; therefore, I conceive you can only apply it to the felloes he has previously mentioned—"or make them in one piece with the spoke, with the brackets on each side projecting from the side of the spoke to the edge of the felloe;" I therefore should conceive that taking the description alone, your Honour will come to the conclusion that he has duly described the elbow-bend; but when you compare it with the drawing before the Court, when you come to the figure 3, and also to the reference to the figure 3, which is contained in the drawing, it is impossible to come to any other conclusion than that he has duly described what we term the elbow-bend.

The Vice-Chancellor.—All I can say on that is, that if

Hague

he has by his words described them as making them in one piece, he has by his figure represented quite a different thing.

Mr. Knight.—It is a most remarkable thing that the defendant's own witnesses, in alleging the identity of the two inventions, all refer to the figures, the drawings appended to Paton's specification, and not to the words. It is a most remarkable thing; look at Hebert's and Braithwaite's affidavit and you will find that.

Mr. Jacob.—He says it may be made either way.

Mr. Richards.—He says it may be made in either way. Let us see whether or no the other witnesses do contradict what we assert, namely, that the patent of 1830 was similar to that granted to Paton many years before. The first witness they produced on this subject is Mr. Carpmael; and he states that in neither of the specifications of Paton, and Losh and Stephenson, is any description of a railway wheel, made or combined in bending the spokes in such manner as to form an inner ring shrinking on railway or flanched tire, but that combination is a very important improvement of railway wheels. Your Honour observes in the affidavits we have previously made, we stated distinctly and clearly, that Paton's patent had previously existed, and that the plaintiff's invention was similar to what Paton had previously invented. The witnesses whom they produce, therefore, ought distinctly to have stated at once that it had nothing to do with it, that in point of fact there was no elbow-bend. Now what Mr. Carpmael means to describe is this, very justly, that you will find in no former railway wheel, a combination of the flanches, the bend, and also the shrinking on. Now, Sir, do they claim that? They claim nothing but an improvement in railway wheels without the flanches.

The Vice-Chancellor.—That is out of the question.

Mr. Richards.—That is entirely out of the question, the flanch is out of the question, the shrinking on is out of the question, and yet Mr. Carpmael will not venture to say that Paton's patent had not the elbow-bend. He says Paton's had not the three combined together, namely, the flanch, the elbow-bend, and the shrinking on. It is a very singular thing which supports the statement made by the defendant Mr. Hague, that the other witnesses were erroneous in stating that Paton's had the

Lock

elbow-bend. Mr. Carpmael, whose attention was particularly drawn to it, does not deny it, he gives entirely the go-by to the elbow-bend, and says, that Paton's had not the three combinations. Now your Honour will also find what Mr. Cottam says on the subject. He says, "that to the best of his knowledge and belief, the invention described in the said specification of 1830, was a new combination of parts in the construction of railway wheels, which had not been before practised, and that the combining wrought-iron spokes turned or formed into curved projections, producing the inner ring of the wheel and shrinking on of flanched or railway tire, was a new adaptation and combination." Now, certainly, you have here Mr. Cottam, whose attention was also particularly drawn to this, and he will not say that Paton's has not the elbow-bend; he admits they are not new in their parts, but he says, the combination is new. Now the combination is that which I have previously stated to your Honour. He says these wheels are not fit for railways, but they are fit for tram-roads. These wheels which were invented by Paton, are clearly and obviously fit for a tram-road, you want no flanch there, and the only alteration between these wheels and those before your Honour, is, that these have the flanch and the others have not. Looking at the specification of Paton, looking to the drawing and the evidence of these parties, not one of them says that Paton's has not the elbow-bend. They leave entirely uncontradicted by their own evidence, the assertion which was originally made by Mr. Hague and the other witnesses, that Paton's has the elbow-bend, and this is put beyond all doubt when you come to look at the evidence which we have last produced. Braithwaite and Ericsson say, "that the return of spokes in the plaintiff's patent forms the principal feature of his invention, since he shows no other mode of fixing the spokes to the rim of his wheel than by such return or bending of the spokes." Now, you observe that these gentlemen call it "the return," it means exactly the same thing.

The Vice-Chancellor.—No doubt the return or bending means the same.

Mr. Richards.—"Fig. 5, shows that the plaintiff fixes the spokes by means of a double elbow-bend, or T piece, and which mode the plaintiff particularly claims as part

Nague

of his invention." Now that T piece, will answer to fig. 3, in plaintiff's drawing. It appears by the drawing of Paton's specification he fixes the spokes of his wheels in a similar way, that is, by means of a double elbow-bend, or T piece.

The Vice-Chancellor.—Now that I take to be completely denied. I have no doubt when these gentlemen made the affidavit, they made it correctly enough in their own judgment, because they made it with reference to what they had seen done; but it is quite clear to me that the figures on the specification represent a totally different thing.

Mr. Richards.—They made the affidavit after having seen the drawing, and after having read the specification. They next say, "that the next important feature in the plaintiff's patent as shown in the drawing of his specification, figs. 1 and 6, is that of attaching or uniting the returns or bends of the spokes to each other, so as to form a continuous ring independently of the tire of the wheel. That by the drawing, fig. 4, of Paton's specification, the returns or bends of the spokes are also attached to each other, by which a continuous ring is also formed independently of the tire; deponents are for these reasons decidedly of opinion that the plaintiff's supposed invention or improvements are similar to the inventions of Paton's, and if the patent so granted to him the said Paton had not already expired, would have been a direct infringement of the said patent." In cases of this sort, the evidence of scientific gentlemen is extremely useful, on this ground, that they are the persons who are to make the instruments from the specification, and the drawings connected with it. Now it is quite clear that Messrs. Braithwaite and Ericsson, if they were desired to make a wheel according to Paton's plan, would carry it out by making the elbow-bend. They have also stated that, looking to Paton's plan, and also to the plan of the plaintiff, it is precisely the same. Your Honour has now before you the drawings, the description, and the evidence of these persons, and, above all, you have it not contradicted by their own witnesses, for not one of them deny that Paton's plan and the plan of the plaintiff are one and the same, so far as the elbow-bend is concerned. If we are right on that, and it is the same plan which Paton previously invented, there is an end of the ques-

Losh v.

tion. Then the next subject for your Honour's consideration is whether we have infringed it. With respect to the felloe and the spoke, ours is obviously much stronger than theirs. Ours is welded at the nave and forms a segment of a circle; theirs is not welded at the nave, and, of course, it has not the same power. But there is another reason why, I submit, your Honour will not grant the injunction; in their specification they have stated that their spokes are made perfectly straight; the model they have produced shows that they are made bent. I apprehend that that would be a very good reason to make the Court pause before it granted the injunction which is asked.

Mr. Chandless.—I am on the same side, and I shall address myself more particularly to the specification of Paton, with regard to the difficulty which presses on your Honour's mind.

The Vice-Chancellor.—The fact is, I do not feel any difficulty; the difficulty, if any, is created by the language of the verbal part, and the mode in which the drawing is made.

Mr. Knight.—Your Honour is aware that no affidavit on the part of the defendant suggests that Paton ever made conformably to their construction of the verbal part.

Mr. Chandless.—I do not know what *Mr. Knight* means by the verbal part. According to fig. 3 of this specification I am ready to admit that, by reason of the external lines being the same it would seem—

The Vice-Chancellor.—It does seem actually—

Mr. Chandless.—It does seem that the felloes are separate from the spokes, and that they are united by some contrivance. But we must look at that description with reference to what *Mr. Knight* terms, the verbal explanation, in the specification itself, both the drawing and the words of reference at the commencement. He says, "I make them and the spokes of one solid piece." What is the meaning of that?

The Vice-Chancellor.—That is, the spoke and the felloe—

Mr. Chandless.—May be made of one solid piece.

The Vice-Chancellor.—He goes on to say, "or fix the felloes to the spokes with rivets, screws, or nuts."

Mr. Chandless.—The spoke may be made with the

Mague

felloe, or the spoke may be made by itself; the spoke may be made of one solid piece or fixed to the felloe with rivets, screws, and nuts.

The Vice-Chancellor.—No—not the spoke fixed to the felloe. When we come to the specification itself the words are, "I make the felloes, or the external circle that the tire fixes on, of iron or other metal, and make them and the spokes of one solid piece." That is the point; he makes the felloes and the spokes of one solid piece, or he fixes the felloes to the spokes with rivets, screws, and nuts. It is quite obvious that the expression "making the spoke and the felloe of one solid piece," would imply that the whole of the felloes and all the spokes are one solid piece.

Mr. Chandless.—I am ready to admit that on the specification it might carry that construction, that there was a complete rim, and to that the different spokes were fixed and were made of one solid piece. But what is the felloe? The felloe is not the whole of the rim, it is the portion of the rim that lies between the two spokes. In this drawing he gives a view of the spoke and the felloe, the felloe being only a portion of the inner rim, not the whole of the rim, and, consequently, when you couple the description of what is stated in the words on the drawing with what is stated in the specification, it appears to me it is quite evident he means each spoke to be fixed to each separate felloe; he fixes it either by making them one solid piece or by riveting the spoke to the felloe. Under fig. 3, there are two figures, one of them is of a spoke by itself, and the other is a spoke with a felloe connected with it. Now, if the felloe means the whole rim, that is, the whole of the inner rim, it might be said that in these words of reference there is some ambiguity, as in the specification it might mean, a complete rim being produced by the spoke being made with the whole of the rim in one piece. But the felloe is merely a portion of the inner rim, and when he says, "I make the felloe, or the external circle that the tire fixes on, of iron or other metal, and make them and the spoke of one solid piece," what can be meant by it but that the felloe and the spoke are together one piece of iron? If the specification can bear the construction which your Honour considers, of being one entire rim, and all the spokes made out of one piece of iron, still it is impos-

Losh v.

sible to apply that, where the number is the singular number, where he speaks of only one, and he gives a description in this fig. 3 of the spoke and the felloe together. If it had happened that the three inner lines had been omitted, or if he had taken the trouble of inserting the figure to correspond exactly with the words of reference, taking them together, there would have been no ambiguity at all about it, but the most that can be said is, that it is ambiguous, that the words of reference, and the description in the drawing, from the circumstance of the inner lines being continued in it, do create an ambiguity in consequence of it: it is clear that, looking at that alone, each spoke and each felloe may be made together of one solid piece. What are the affidavits on that subject? because your Honour has an affidavit of an individual who actually worked them according to the description in the patent. The best testimony, certainly, is of those who made wheels according to that description; and James Long swears positively "that the wheels so stated by Paton in his specification were in all material parts exactly like the wheel which he himself actually made."

Mr. Knight.—What does he mean by material?

Mr. Chandless.—He tells you in what respects they differ.

Mr. Knight.—It does not say in all parts.

Mr. Chandless.—He says in all material parts except this, "that the wheels so made by the said Thomas Paton had wrought-iron hoops, or tires, of flange hoops or tires." Certainly, if there were nothing more in this case than what appears before your Honour it would not—

The Vice-Chancellor.—He says in all material parts, except in some parts which are not material.

Mr. Chandless.—In a case of this kind with this ambiguity on it, it ought not to be the subject of an injunction, but of an investigation in a Court of Law, and we are ready to meet them. And I should hope, therefore, your Honour will not think this is a fit case for an injunction, but will leave the plaintiff to his remedy at law, where the matter will be more fully explained.

The Vice-Chancellor.—It really seems to me that this is a case in which I must grant the injunction, because, as I understand it, the wheels that the defendant has made are certainly wheels made according to that thing

Hague

for which, as I understand, the plaintiff has taken out his patent, the substance of it being a patent for making wheels which shall have the spoke and the felloe in parts of the same piece, that is, in other words, the spoke is to be made with an elbow bend, which elbow bend will constitute a part of the felloe. Now it seems to me that there can be no question, but that the wheels complained of as having been made by the defendant do answer the description of the plaintiff's wheels, and I do not think it enough, on a question of injunction, for the defendant to say why he has done the thing complained of, but will not do it again. That is not the point, because if a threat had been used, and the defendant revokes the threat, that I can understand as making the plaintiff satisfied; but if once the thing complained of has been done, I apprehend this Court interferes, notwithstanding any promise the defendant may make not to do the same thing again. I cannot but think, however, that there is a good deal of question raised by means of the production of Paton's patent, and what is stated by the witnesses on the part of the defendant on the point; whether altogether the thing which is so stated in the plaintiff's specification as an invention, is an invention or not, there is a question on it, and it appears to me that even if Paton's specification and patent were in point of fact bad, yet if Paton had actually been making wheels which were on that principle on which the plaintiff's were made, then the plaintiff's patent would fail.

Mr. Knight.—Certainly, I admit that.

The Vice-Chancellor.—The thing is certainly left in doubt on that very affidavit made by Paton's people; they have not sworn to the fact in the simple manner they might have sworn it, but they have so sworn it as to leave it uncertain what they do mean; they have sworn that in all material parts the things were the same, except something which is immaterial. If they had said all parts were the same, that would come to the point, and I should have understood it; but they have not sworn to that fact, and, therefore, they have left a doubt on their own affidavit as to what it was that they meant to state. I cannot but think that if the matter was to depend on Paton's patent, there would be great ground for saying that the specification is not good. It may, perhaps, be held, if it were to go before a jury, that it was good; that I can

Discrepancy
between [illegible]
words & dra
in a Specn
may be

Losh v. Hague

may be fatal

to the Patent

understand, but it is quite obvious to my eye, as I view the drawings annexed to the specification, that they do not represent the thing which he meant to be represented; if it be the fact that he meant to have represented that the spoke and the felloe were made of one piece, it is evident from the drawing that that is not so represented, because the drawing introduces internal lines, which of necessity give the appearance to the eye of a combination of parts, and not one piece; and when I look to the singular language which he has used in the body of the specification, it does not appear to be at all clear on the words used that he did mean that thing which is imputed to him; and certainly, if he did mean to say so, then the drawings have contradicted the words, and have represented one thing and the words another. As to the length of time that has elapsed, I do not think there is much in that. On the 23rd of March, the plaintiff received some information that there was an invasion of his patent, and some portion of time it appears was spent in making inquiries; there was notice given distinctly on the 8th of May. Then some further correspondence takes place and letters between the parties, and then a bill is filed on the 7th of July, and the application is virtually made. I cannot but think, therefore, that the plaintiff has come in sufficient time, and the only thing that rather appears to me to be probable, is, that the substantial grievance is but small, because, if it be true that the defendant will not make any such wheels again, and if it be true that he has taken a contract with the London and Birmingham Company for making wheels of a different description, this is very little more than a mere scientific discussion on an abstract right. In these cases on patents one is obliged to go a great deal on hypothesis alone, it seems difficult to make out what the real fact is. It appears to me there must be an injunction, and you must undertake to bring such action as you may be advised.

Mr. Knight.—On or before the second day of Michaelmas Term.

The Vice-Chancellor.—And reserve all further directions.*

---

* An action was brought in this case, and the evidence was similar to that produced in Chancery; with the addition, that it was clearly shewn that Paton, in attempting to carry out his invention, found it to fail, and

In re Swaine's patent.

IN RE SWAINE'S PATENT.

In the Privy Council.—March 1, 1837.

This was an application on the part of the patentee for an extension of the term of a patent, granted to him the 9th October, 1832, for "a method of producing and preserving artificial mineral waters, and for machinery to effect the same." The petition stated that great delay in getting the invention into use had arisen from the difficulty experienced in obtaining a proper spot, and also in fixing suitable machinery; that Brighton was ultimately determined on as the most proper place for putting the invention into practice; that afterwards much difficulty had been experienced in getting the product of the invention well before the public, the invention being of a class that required time to make it known, and to obtain the confidence of the public; the consequence had been that it was only within the last two years that the invention had got fully before the public; that no benefit had been derived from the patent, but, on the contrary, large expenses had been incurred.

The *Attorney-General (Sir John Campbell)* attended on behalf of the Crown, and stated, that he did not offer any opposition, provided the petitioner made out the statement in his petition to the satisfaction of their Lordships, and that there was novelty in the invention, he would leave the matter in the hands of their Lordships; at the same time he felt it to be his duty to call their Lordships' attention to the form of the specification, the sufficiency of which, he believed, would be found to be very questionable.

The formal evidence, consisting of the patent and specification, together with the advertisements, were put in,

---

then changed his plan, and welded portions of the outer ring of a wheel to each of the spokes; and in this way he made about thirty pairs of wheels, which were in use for a long time. The Jury found a verdict for the plaintiff on all the issues but one. That part of the invention claimed by Mr. Losh was old. The patentee (Mr. Losh) afterwards disclaimed that construction of wheel, where a portion of the outer ring was welded on to each of the spokes, and confined the invention to the bending of bars into two elbow-bends, thus making two spokes and the intermediate part of the felloe, or ring of the wheel. There were no points of importance raised in the trial; it is not, therefore, thought necessary to give it at greater length here.—W. C.

In re Swaine's patent.

In re Stafford's patent.

and medical men were called to speak as to the utility of the invention. It was shewn, by other witnesses, that upwards of 28,000*l.* had been expended, and that only 16,000*l.* had been received in return.

Lord Lyndhurst.—Having taken into consideration all the circumstances, we think that a sufficiently strong case has been made out to justify us in recommending her Majesty to extend the period for which the letters patent in this case were granted. Applications of this kind are of very considerable importance, and require to be investigated with a great deal of attention. We have bestowed that attention, and we consider the invention as very meritorious, the result of a great deal of labour, care, and science, and that it is extremely useful in its effects. We are satisfied, by reasonable evidence, that the party has sustained very considerable loss, and under these circumstances we think that the period ought to be extended for a period of seven years.

IN RE STAFFORD'S PATENT.

In the Privy Council.—July 4, 1838.

In the case of this patent, which was granted to Daniel Stafford on the 24th Dec., 1824, for "Improvements in Carriages," an application was made by petition under the Statute for a further period, in consequence of the patentee not having been remunerated. The invention consisted in so hanging the body of the carriage, that in case of driving over a bank, or raised footpath, the body, in place of inclining over in the opposite direction, was caused, by the very act of tilting of the other parts of the carriage, to retain its vertical position; so that a coach, so constructed, could not be caused to be turned over by those means which ordinarily were the cause of their being overthrown. The patentee had spent about 2,000*l.* in maturing the invention, but had been unable to extend the use thereof, so as to obtain a benefit from his patent. The coach proprietors opposed its introduction, by reason of the additional expense; and it could only be forced on the coach proprietors by the public. Therefore, the introduction of such an invention was necessarily slow.

Several coachmen, who had driven coaches so con-

In re Stafford's patent.

In re Wright's patent.

structed, gave evidence of their great safety; that they had driven at great speed, with very spirited horses, over banks and undulations, which no ordinary construction of coach could safely have passed over.

The formal evidence of advertisements and notices were put in, together with the patent and specification.

Lord Lyndhurst.—The original Act of Parliament, according to which letters patent have been granted since the time of James I., allows fourteen years, and it was considered that fourteen years would be sufficient to enable the patentee to obtain remuneration. It turns out, however, that Mr. Stafford has received not only no remuneration, but that he has been an actual loser. We think, under these circumstances, it is not unreasonable that he should have the full addition of seven years.

Their Lordships reported accordingly, and new letters patent were granted.*

IN RE WRIGHT'S PATENT.

In the Privy Council.—February 23, 1839.

THIS was an application on the part of the assignees of a patent granted to Lemuel Wellman Wright, on the 15th May, 1824, for "certain combinations and improvements in machinery for making pins."

Sir F. Pollock and *Mr. M. D. Hill* appeared for the petitioners. *Mr. Maule* and *Mr. Godson* appeared for Messrs. Kirby, who opposed the application. *Mr. James* appeared on behalf of the administrators of a deceased partner of the petitioners, and the *Attorney-General, (Sir John Campbell,)* appeared on behalf of the Crown.

The notices in the "Gazette" and newspapers, the patent and the specification, and also the assignments, were put in.

Mr. Maule suggested that the execution of the Deeds of Assignment should be proved in the ordinary manner, but the notice of objections given by the Messrs. Kirby did not make any objection to the title of the petitioners. Their Lordships, however, ruled that it was for the petitioners to make out their title in the usual way, and the deeds were then proved to have been duly executed.

---

* Railways came successfully into use immediately afterwards; so that the patentee did not materially extend the use of his invention after the new grant.—W. C.

Sn 20

Mr. B. Donkin, Mr. M. I. Brunel, and Mr. W. Carpmael, Civil Engineers, were called to explain the nature and utility of the invention. The machine consisted of a combination of three parts working together. First, the wire was drawn into the machine from a hank, it was then straightened and cut off into proper lengths; the lengths of wire were next passed in succession to two pointing apparatuses, by which each point was made to consist of two cones, running into each other; and lastly, the pointed lengths of wire were subjected to two processes of heading. The pressure in the first dies caused the wire to swell out into a recess in the dies a small distance beyond the end of the wire, the punch in the first dies being of the same diameter as the wire; the whole length of the wire, excepting where the commencement of the head was to take place, being surrounded and held by the dies, by which peculiar arrangement of dies and punch, the wire could only give way and expand at the part where there was a recess in the dies; the effect of this portion of the process of heading being, that the wire was caused to expand a little beyond the end, a short length of the wire still remaining at the crown, or top of the head, and the second heading dies, to which the lengths of wire (pointed and partially headed) were next conveyed, caused this projecting piece to be driven down, and the head completed. The witnesses spoke of this arrangement of dies, as being a very beautiful arrangement of instruments for producing the desired result. The novelties consisted, first, in the means of combining the several parts of the machinery, so that the portions of wire might be carried from process to process in succession, by mechanical fingers. Secondly, in the use of two pointing apparatuses, whereby, in place of the points consisting of a single cone, as in some previous machines, each point was caused to consist of a combination of two cones similar to pins' points made by hand pointing; and thirdly, the improvements consisted of the arrangement of the two sets of heading dies.

Mr. E. Taylor, Superintendent of the factory, proved that it was five years before the patent was got into practical work, partly by reason of misunderstandings between the patentee and assignees, and partly by reason of the nature of the machinery, which required the very best workmanship. The assignee, Mr. Taylor, and the

Wright's patent

patentee, became bankrupts; and up to 1831 the sum of 15,000*l.* had been expended in machinery. That Wright had been paid 3,755*l.* for his patent. That no profit had been made up to the bankruptcy. That from the date of the partnership of Taylor, Shuttleworth, and Watnerby, in June, 1832, to June, 1834, the profits had been 1,484*l.*; in the next six months, 1,035*l.*; in the next six months, 971*l.*, since which, in consequence of Mr. Watnerby's death, who kept the books, a balance had not been made.

On the part of the Messrs. Kirby, Mr. Farey, C.E., was called to show the similarity of Wright's invention to previous machines made by Messrs. Kirby before the patent; and he also pointed out some objections to the specification.

Mr. M. D. Hill replied on behalf of the petitioners; and their Lordships intimated that they should recommend an extension of the patent.

Mr. Maule called upon their Lordships to impose conditions in the new grant, in order that the Messrs. Kirby, who had expended moneys for the patentee, Mr. Wright, might be remunerated; he hoped their Lordships would require the petitioners to permit the Messrs. Kirby to use the invention, free of cost.

Mr. James, on behalf of the executors of Mr. Watnerby, urged that in the new grant the claims of the representatives of that gentleman might be recognised.

Their Lordships stated that they should recommend an extension of the patent in favour of those in whom the legal estate of the letters patent was vested at the time of the application to the Court, leaving to Messrs. Kirby and the administrators of Mr. Watnerby any claim they might have at law, or in equity; and that under the particular circumstances of the case, and the position of the parties, there would be no costs.

Their Lordships reported accordingly, and new letters patent were granted to the petitioners, without imposing any conditions.

IN RE WRIGHT'S PATENT.

In the Privy Council.—February, 1839.

This was an application on the part of the patentee for the extension of the term of letters patent granted to

In re Wright's patent.

In re Kollman's patent.

him for "Improvements in Machinery, or Apparatus, for washing, cleansing, or bleaching of linens, cottons, and other fabrics, goods, or fibrous substances."

The letters patent and specification were put in, and evidence given of the usual advertisements having been made.

Several witnesses were called, who spoke of the great utility of the invention, and who attributed the want of introduction of the invention to the embarrassments of the patentee. That the invention had never had a fair chance of success, owing partly to the engagements the patentee was under, to complete a previous invention for making pins by machinery. It was shown that the invention had been used with success by several bleachers.

The Attorney-General (Sir John Campbell) on behalf of the Crown, stated that he knew of no objection to the prayer of the petition, except that the invention did not appear to have been brought into extensive use, which it was for their Lordships to consider whether that circumstance had been satisfactorily accounted for.

The Lord President.—The Committee, looking at the merits of this invention, are disposed to recommend to Her Majesty to allow of the extension of the patent for the term of seven years, considering that the circumstance of its not having been brought more extensively into use, is explained by the evidence.

The report of the Committee was made accordingly.

IN RE KOLLMAN'S PATENT.

In the Privy Council.—February, 1839.

This was an application on the part of the patentee for an extension of his patent, for improvements in the mechanism of pianofortes.

Mr. Attorney-General (Sir John Campbell) appeared to watch the case, on behalf of the Crown.

The ordinary evidence was given as to the advertisements and notices. The letters patent and specification were put in. Evidence was called to show the great merit of the invention, and that the patentee had made no profit.

The Attorney-General cross-examined the witnesses, to ascertain whether the specification was sufficiently clear

In re Kollman's patent.

In re Roberts's patent.

and certain, and stated to their Lordships that as the invention appeared to be a meritorious one, and that as the patentee, from circumstances beyond his control, had not obtained compensation for the merit of his invention, no opposition would be made on behalf of the Crown.

Lord Lyndhurst, having shortly gone over the particulars of the case, said, We think this is a case for an extension of the patent for seven years.

Their Lordships reported accordingly, and new letters patent were granted.

IN RE ROBERTS'S PATENT.

In the Privy Council.—February, 1839.

This was an application by the patentee, Mr. Richard Roberts, of Manchester, for an extension of the terms of letters patent, granted in England, Ireland, and Scotland, for self-acting mules.

Sir F. Pollock and *Mr. Teed* appeared on behalf of the petitioner.

No opposition was made, and the *Attorney-General (Sir John Campbell)* appeared on behalf of the Crown.

The patents and specifications were put in, and also the advertisements and notices.

Mr. Fothergill and others were called, who explained the nature and great utility of the invention. Before this invention, in every spinning mill, not only the masters, but also the workpeople, were wholly dependant on the caprice of the spinners; if they did not choose to work, nothing could be done. It required great skill in the weaver to work the old mules. The witnesses showed that great benefit had been derived by the public, by setting the master spinners free from the caprice and uncertainty of the workmen. Every possible opposition had been made by the working spinners. It was shewn that the patentee had sustained great loss of money and time, by reason of a fire. It was also shewn that machinery, working about 600,000 spindles, had been disposed of by the patentee. The accountant showed that the expenditure, including remuneration to Mr. Roberts and his partners, according to the time which they respectively devoted to the invention; the payment of pattern-makers' wages and costs of materials, In re Roberts' patent.

In re Downton's patent.

from the commencement of Mr. Roberts's experiments to the 31st December, 1838; the cost of letters patent, specifications, and law expenses, with interest at five per cent. per annum on the capital employed, amounted to 29,044*l.*; and on the other side the receipts, 35,988*l.*, leaving a profit of 6,944*l.*, against which was a loss of 10,154*l.*, above the insurance from the fire.

Lord Brougham.—The actual expenses should be taken; but deducting the value of Mr. Roberts's time, the expenses of taking out and defending the patents. If the interest is taken off on one side, it must be taken off the other.

Sir F. Pollock.—For the last four years these patents have yielded 5,000*l.* a-year; that is a fair test of what the inventor ought to have received during the whole fourteen years. During the first seven years he got nothing, and was under a great outlay.

The Lord President.—It is the opinion of their Lordships that these patents should be prolonged for the term of seven years, as prayed, partly in consequence of the ingenuity of the invention, and partly also in consequence of the peculiar character of the resistance which has been opposed to it.

The report of the Committee was made, and new letters patent granted accordingly.

IN RE DOWNTON'S PATENT.

In the Privy Council.—June, 1839.

This was an application by the widow and administratrix of the late Jonathan Downton, for an extension of the period for which the letters patent were granted in 1825, for improvements in water closets. The patent and specifications were put in, and evidence given to show that the proper advertisements had been made.

Mr. W. Carpmael, C. E., was called to explain the nature and utility of the invention, which was principally applicable to water closets used on board ship; and the same consisted in applying a force pump in such manner, that, in supplying water to the pan or basin, the soil was pumped away out of the ship; and such was the arrangement, that water closets according to the patent could be

In re Downton's patent.

In re Cutler's patent.

used below the water line at which the ship floated. This, amongst other advantages, was highly important, and had of late years been the cause of the Patent Ships' Water Closets coming largely into use; but there had been much prejudice to overcome before the new water closets were appreciated. It was proved that the patentee had had great difficulties in introducing his invention, not only by reason of the prejudices, but also from want of capital.

The application was opposed on behalf of parties in the trade; they objecting that the patentee had not allowed a fair remuneration to the trade, or otherwise the invention would have been more extensively used.

Lord Lyndhurst.—Their Lordships are of opinion that the term of the patent should be extended for five years; and will report accordingly.

Mr. Roebuck, on behalf of the petitioner, applied for the costs the petitioner had been put to by reason of the opposition.

Their Lordships granted the application, stating that the Attorney-General appeared on the part of the Crown and the public.

IN RE CUTLER'S PATENT.

In the Court of Chancery, before the Lord-Chancellor (Cottenham).
—April, 1839.

THIS was an application, by petition, to seal letters patent, notwithstanding there had been a caveat entered at the great seal. The invention was for "An improved method, or methods, of constructing chains for suspension-bridges, cables, mining and other purposes; and for an improved method, or methods, of making the bars, or links, and bolts thereof."

His Lordship referred the petition to the *Attorney-General (Sir John Campbell)* to report whether the patent ought to proceed. At the hearing which took place before the *Attorney-General*, it was arranged that both parties should produce models to explain their respective inventions; and as the patent, if granted, would bear date on the day on which it was lodged at the Great Seal office, no objection was made to the opposing parties seeing the petitioner's invention. At the hearing, the Attorney-

In re

General decided there was no similarity in the two inventions, and that the patent of the petitioner might proceed; and he was about to report to the *Lord-Chancellor* to that effect; but the opposing party then objected to the grant, on account of want of novelty of the invention, and the opponent undertook to show to the Attorney-General that the specification of a very old patent contained a similar invention; and drawings of the said invention were produced, which induced the Attorney-General to say that he considered the petitioner's invention was not new, but that it had been anticipated by the previous patent of Messrs. Fussell and Douglas. On this the petitioner had models made, and authenticated, of the chains of Messrs. Fussell and Douglas, (which he stated were useless,) in order to show the Attorney-General the differences between his invention and that of Messrs. Fussell and Douglas; and an application was made to the Attorney-General to see these modes, before making his report; but the request was refused. Notice was then given of an application to be made to the Court, to direct a further hearing by the Attorney-General. But, notwithstanding this, the Attorney-General made his report, stating, "that having examined all proper parties, and inspected and considered all necessary papers and documents relating to the matters in his Lordship's order mentioned, he was of opinion that the patent ought not to issue, on the ground that the alleged inventions are not new and useful." And he further certified, "that this was a different ground from that upon which the caveat was lodged against the said letters patent, and that it was not until the second meeting that the party objecting to the said patent was prepared to substantiate the said ground of objection."

Several affidavits were filed in support of the petition, showing the novelty of the invention, as contrasted with that of Messrs. Fussell and Douglas.

On the part of the petitioner, it was contended that the only question submitted by his Lordship to the Attorney-General was, whether the invention of the petitioner was like that of the opposing party? In fact, that was the only question at issue between the parties when the matter was sent, according to the custom of the Court, to the Attorney-General, and therefore that officer ought not to have heard the opposing party as to the matter of novelty

Cutler's patent

of the invention, more particularly as the opposing party somewhat irregularly had been permitted to see the petitioner's invention, when the hearing took place before the Attorney-General. The facts were these, and as they were sworn to on the part of the petitioner, and not contradicted by Mr. Haines, the opponent, it was agreed by the parties on going before the Attorney-General, that if it turned out that Mr. Cutler's invention was not the invention of Mr. Haines, that the patent should proceed. It turned out not to be the same invention, the two inventions were in no respect similar; the consequence was, that the Attorney-General prepared his report in favour of Mr. Cutler; but Mr. Farey, the scientific gentleman, who had acted on behalf of Mr. Haines, in order to explain that gentleman's invention to the Attorney-General, stated, on seeing the invention of the petitioner, that the invention was not new. Mr. Farey told the Attorney-General that he knew of a patent granted in 1799 to Messrs. Fussell and Douglas, which contained a similar invention to that of Mr. Cutler. Mr. Farey subsequently produced drawings of that patent, and the Attorney-General, on inspecting them, thought the invention of Mr. Cutler was new, and the petitioner thought that there was an end of the case; but Mr. Farey wrote to the Attorney-General afterwards, to the effect that on a further examination of the specification of Fussell and Douglas' patent, and having been able to give a closer consideration to the subject at the enrolment office, it appeared to him that Cutler's invention was the same as that of Fussell and Douglas, although it had not appeared to the Attorney-General to be so at the meeting. The Attorney-General, in consequence of this letter, had the parties again before him; but Mr. Cutler having considered at the previous meeting that the opposition was at an end, had gone away. The solicitor, however, endeavoured to show the distinct character of Mr. Cutler's invention, and the Attorney-General made his report, without Mr. Cutler having an opportunity of showing by models what the previous invention was; and the Attorney-General had decided, simply on one inspection of the drawing of Fussell and Douglas, that Cutler's invention was not new and useful now. It would be found from the affidavits of Mr. Carpmael and other scientific men, that there were material differences, the tendency of which was to make that useful which, according to Fussell and Douglas, was useless, the differences constituted important improvements. The affidavit of Mr. Carpmael most clearly made out Mr. Cutler's case, nothing could be more clear than the manner in which the distinct character of that invention was made out by that affidavit. The Learned Counsel, by the aid of models, pointed out the nature of the two inventions, and urged that the Attorney-General, not having had the advantage of seeing the models, and having simply compared the drawings, could not have the full knowledge of the matter which his Lordship would now obtain.

On the part of the opposing party, it was contended that the Attorney-General was the proper officer under the Crown to decide whether a patent should be granted. That officer had decided that the patent in this case ought not to be sealed. The Lord Chancellor in no case had ever directed a patent to be sealed where the Attorney-General's report was adverse to the grant.

The Lord Chancellor.—The question now before me is, whether it appears to me that there is sufficient reason for not obeying the directions I received from the Crown for affixing the great seal to the patent? Do not let it be understood I exercise original jurisdiction over the matter.

The Learned Counsel stated that although his Lordship was not acting on the report of the Attorney-General as originally made to the Home Office, still, in consequence of the caveat, his Lordship had to ascertain whether the Crown had not been misled by the petitioner asking for a patent for that which was old. The petitioner had been sent back to the Attorney-General to ascertain this fact, and the opposing party satisfies the Attorney-General that his report ought not to have been made in favour of Cutler, and so the Attorney-General had now reported. The petitioner not being satisfied with the Attorney-General, comes to this Court and asks to have his patent sealed on two grounds:—First, that the question of novelty had not been referred back to the Attorney-General; and, secondly, that the invention was different from that of Fussell and Douglas. The whole question was referred to the Attorney-General; and with respect to the novelty of the invention, when compared with that of Fussell and Douglas, it would be for his Lordship to say whether, the

Cutler's patent

affidavits on both sides being considered, that there could be said to be any novelty for which letters patent ought to be granted.

The Lord Chancellor gave judgment as follows:—The first proposition on this case was on the supposition, that those who now appear to resist the patent were the discoverers of an alleged invention similar to that for which a patent is now applied for; that, upon investigation, turns out to be not well founded, and is not now persevered in. In the course of discussing that matter between the parties, an objection is raised of a general nature, not growing out of the patent right, but a general objection to the patent, on two grounds; first, it does not exhibit any invention of anything new; and, secondly, that what is proposed to be done would not be useful if introduced in practice. With regard to the second, it is not very easy sitting here to form any very conclusive opinion as to the usefulness, nor is it very necessary to inquire into that (particularly considering from whom the objection emanates), because if it be so perfectly useless as is represented, it will interfere with no man's rights, and it will be a mere dead letter, which no man would wish to imitate if they had the right; but as far as I can come to any conclusion from what is represented to me, I consider it is a considerable improvement. I may be mistaken; but certainly, at present I am not satisfied it is not an improvement. With regard to the novelty, there really seems to me to be very little doubt or difficulty. It appears hitherto all chains have been formed on either one of two principles—either by one branch of the chain being linked into the next, and that is the ordinary most simple chain, or else the different branches are connected together by holes perforated through each and connected by a pin or screw; these appear to have been the two modes adopted in all manufactories of chains. The present party who applies for a patent says:—I adopt bolts, and I unite the two, and the joint of my chain consists not only of that which constitutes a link, and therefore would be operative without a pin, but it is also constituted of a pin, and instead, therefore, of having a joint of one character or the other, my chain has two joints, one consisting of the link, the ordinary link, the other consisting of the pin. That was the view the Attorney-General took of it when the case was first brought before him on the reference back by me, and

In re

he was of opinion there was that union and combination of the two principles which entitled the party to a patent for the alleged course he intended to pursue. It appears afterwards the Attorney-General's opinion was altered, on the ground that he had it represented to him, and he considered the case as it was represented, that Fussell and Douglas's patent also had this application of the pin, or at least an application so similar to what is now proposed, as to deprive the party to the claim of novelty in the invention. I think the facts could not have been brought under the Attorney-General's consideration as they have been brought under my consideration, because the sole similarity is in the term used. It is one of those many instances in which a conclusion arises from an inapt use of the same term. This thing may be called a pin, and may be correctly called a pin, and the other, no doubt, may be called a pin, but it is not because they go by the same name they are to be considered as identical—they are not used for the same purpose in any one respect. This of Fussell and Douglas is a variation from the original mode of making chains; namely, of one branch of the chain being linked within and turning in the other. This section of the model of Mr. Cutler's chain, which I have had given to me to-day, exhibits this in a very clear light. Take away one of the links, and see how this stands when the next link is taken away. Here is a solid substance; that is, solid except that it forms two parts, consisting entirely of the substance of one of the links, which next link is connected with it, and a joint is formed by being inserted within that link so perforated, and that is a link in the ordinary sense of the term, varied in form, but still it is the same; there is no joint constituted with any pin, but there is the introduction of one link into the substance of the other, and so they are connected, and that constitutes a joint. It is true, for a purpose which I shall presently explain, according to my view of the case, that in the more solid branch of the chain there is that which is called a pin going into the solid part, and projecting to a certain extent beyond the surface of it. To suppose that was inserted for the purpose of strengthening this part might be a rational conclusion, if it were not from the form and shape of the link which is to be connected with it. Which of the two is the strongest? And it would be the greatest absurdity in the world to strengthen that which is strong, Cutter's patent.

and to leave unaided that which is entirely weak, as of course the chain would give way in the weakest part, if any part of the chain gave way. There cannot possibly be a doubt, if a weight were suspended on the chain beyond the power which it has the strength to bear, it would not be the solid substance which would give way, it would be that part which is perforated, and which is left comparatively weak; it cannot, therefore, possibly be for the purpose of adding strength, if it would add any strength: but the specification explains what it is. The specification says, that connexion—that pin, as it is called—shows the different parts coming together by means of wire-pins cast in the iron; this substantial link consists of three parts, which are so connected, that when they have one in use they may maintain relative positions. Therefore it is the centre part, as connected by the pin at the two extremities, which enter into part of the exterior piece to keep it in its proper position, which exactly corresponds with the description here—pieces coming together by means of wire-pins cast in the iron. This model does not represent this piece as perforating that central part, and therefore is not calculated to add to its strength, but is well calculated to maintain it in its position, because it does enter to a certain depth. That corresponds also with the specification in Fussell and Douglas's patent, where it describes it that R, represents the different parts all completely put together, which are kept in that position by means of a screw placed in the centre, not by means of a pin at the two extremities, but by means of a screw placed in the centre, accurately describing the model put in by Mr. Cutler, but not at all accurately describing the model of the other party, because that does represent these pins as coming through the centre, which is contrary to the plate in this book copied from the specification, and also contrary to the plate I asked to see in order that I might ascertain whether there was any mistake, the plate being small in the book, and therefore not easy to ascertain what is represented. I have no difficulty whatever in considering this as the accurate representation of the plate, as it is to be found in the specification in Fussell and Douglas's patent. Supposing it had gone through—not going through tends more distinctly to prove it is not intended for that purpose—but supposing it had gone through, it would only tend to strengthen the crank, and could not possibly be applicable to the purpose of forming the means of connecting the two links. It would have had nothing to do with that, because here the whole substance in which the other link is to turn is constituted of the substantial part of the adjoining link. The pin does not come in contact with the other link at all; the two links are not connected together by it, and the utmost use it would be of, would be to strengthen the parts through which it passes. On the other hand, when I look at the proposed chain, I find it does in all respects adopt the two principles of the chain. It entirely adopts the principles of the two parts of the chain being linked together by their own substance, the best proof of which is, that there is no pin in this, and as long as these two exterior parts are kept together and pressed on the third part, there is perfect security, and nothing can give way, because there is that pummel and socket, the two exterior ones projecting far enough into the interior one to constitute a joint of itself, and it furnishes a complete chain as far as the next two exterior parts rest in the middle part. No doubt it would not be so strong, because there would be a perforation going through the whole, which would, of course, diminish from the strength of the otherwise solid substance that is supplied by a pin—a pin which will act and constitute a proper joint, and constitute a proper connexion if the two links of the pummel and socket were entirely out of the way—not, of course, of the same strength, but operating as a joint, and as a means of connecting the two parts together; this chain, therefore, has both principles in actual operation at every moment. It is either a chain depending on the pin or screw through, or it is a chain depending on the two parts of the chain being linked together, and so constituting a chain on the original principle on which chains were made, and that appears to me to be a combination of these two parts which, according to the opinion of the Attorney-General, formed, when he understood the matter as it really does exist, a combination of principles which was properly calculated to support a patent. The Attorney-General was impressed with the idea, that the pin used in Fussell and Douglas's patent was on the same principle as that proposed to be used in the patent under consideration. On examination, it turns out, though it is called a pin, to be a piece of metal applied to a totally different purpose, Cutler's patent.

Protheroe v. May.

not performing the same duties or applicable to the same object. If I find any part of that which is claimed sufficient to entitle the party to a patent, my opinion is, he is entitled to his patent for that application of the two principles constituting the joints of the chain as they are constituted. It is for him to consider to what extent he can make the claim, and in the present state of the matter, I have no reason to consider how far he may establish his patent beyond that which is directly under my consideration. The patent only gives him a right to that which he may choose to specify in the specification. I am of opinion this patent is good, and it is for him, of course, to consider whether he will carry it any further.

Mr. Wigram.—I trust your Lordship will think we ought to have the costs of the proceedings before the Attorney-General; it was entirely a misrepresentation.

The Lord Chancellor.—What jurisdiction have I to order costs?

Mr. Wigram.—It was on our petition your Lordship referred it to the Attorney-General.

The Lord Chancellor.—What is the course about costs in an application of this sort, *Mr. Wigram?* If you think you can show there is jurisdiction about costs, I will give them. My difficulty is, whether I have jurisdiction; I certainly should give the costs in the case, if I found it was within the province of the Court to do so.

Mr. Wigram.—Your Lordship reserved the costs under the order which you made, and for that reason I should think your Lordship would have the power of giving the costs; perhaps your Lordship will allow us to mention it again.

Upon a subsequent hearing costs were allowed, and the letters patent were sealed as of the 12th of March.

PROTHEROE *v.* MAY.

In the Court of Chancery, before the Vice-Chancellor (Sir L. Shadwell). November 18th, 1839.

In this case a bill was filed by the plaintiff, for the specific performance of an agreement to grant an exclusive license under a patent; and a question was raised as to the validity of the patent, in consequence of certain exclusive licenses which had been granted by the assignees

Prothero v.

of the patent; and in order to settle this question of law, His Honour directed a case to be made, for the opinion of the Judges of Her Majesty's Court of Exchequer, as follows:—

That, on the 24th of August, 1838, letters patent were duly granted, under the Great Seal of Great Britain, by Her Majesty, to Arthur Dunn, thereby enabling him to use and manufacture a certain new and useful invention which he had discovered, of "Certain improvements in the manufacture of soap, and which letters patent, as usual, contained the following clause:— "*Provided likewise, nevertheless, and these our letters patent are upon the express condition, that if at any time hereafter these our letters patent, or the liberties and privileges hereby by us granted, shall become vested in or in trust for more than the number of twelve persons, or their representatives, at any one time as partners, dividing or entitled to divide the benefit or profits obtained, by reason of these our letters patent (reckoning executors or administrators, as and for the single person whom they represent, as to such interest as they are or shall be entitled to, in right of such their testator or intestate), that then these our letters patent, and all liberties and advantages whatsoever hereby granted, shall utterly cease, determine, and become void, anything hereinbefore contained to the contrary thereof in any wise notwithstanding.*" "*Provided that nothing herein contained shall prevent the granting of licenses in such manner, and for such consideration as they may by law be granted.*"

A proper and sufficient specification of the said patent invention was duly enrolled in the High Court of Chancery, within the time limited by the said letters patent for that purpose.

Before the month of July, 1839, and at the time of granting the license next after-mentioned, the said letters patent, and the liberties and privileges thereby granted, became and were vested in twelve several persons as partners, dividing, or entitled in their own rights respectively, and not by representation, to divide the benefit or profits obtained by reason of the said letters patent.

On the first day of July, 1839, the said twelve patentees, or persons in whom the said letters patent were so vested as aforesaid, signed and executed an instrument in writing, whereby, after reciting that they had agreed with Samuel

Shay.

Guppy and Philip Protheroe, to grant unto them an exclusive license, for the use and exercise of the said invention within the city of Bristol, and at such other place or places within thirty-five miles therefrom, as described on the map with a compass, having Bristol for its centre, as they should think proper, and in consideration thereof, the said Samuel Guppy and Philip Protheroe, have agreed to be bound by such terms, restrictions, stipulations, and agreements, as hereinafter mentioned and expressed; it was by the said license witnessed, that in pursuance of the said agreement and in consideration of the covenants, provisoes, and agreements thereinafter contained, they the said twelve patentees or persons in whom the said letters patent, and the liberties and privileges thereof, were so vested as aforesaid, did give and grant unto the said Samuel Guppy and Philip Protheroe, and the survivor of them, during the remainder of the term of fourteen years mentioned in the said letters patent, and for which the said letters patent were granted, the full and free liberty, sole and exclusive license and authority to and for them, the said Samuel Guppy and Philip Protheroe, and the survivor of them, for their and his own use and benefit, subject to the provisoes and stipulations thereinafter contained, to use the said discovery or invention within the city of Bristol, and at such other place or places within thirty-five miles from the said city as aforesaid, as they the said Samuel Guppy and Philip Protheroe, or the survivor of them, should think proper; and in consideration of the license and authority thereinbefore given and granted, they, the said Samuel Guppy and Philip Protheroe, did for themselves jointly, and each of them did for himself separately, covenant with the said twelve patentees, or persons in whom the said letters patent were vested, their executors, administrators, and assigns, that they the said Samuel Guppy and Philip Protheroe, and the survivor of them, should and would, during the term for which the said letters patent had been granted, continue to manufacture, by means of the said patent process, and according to the said specification, weekly, and every week, — tons of soap, at the least, and such further quantity, not exceeding — tons per week, as they the said Samuel Guppy and Philip Protheroe, or the survivor of them, should think fit; and that they the said Samuel Guppy and Philip Protheroe, and the survivor of them, should not in any

Protheroe v.

one week exceed the said quantity of tons, without the consent in writing of the said twelve patentees, or persons, in whom the said letters patent were vested, their executors, administrators, or assigns. And also, that they the said Samuel Guppy and Philip Protheroe, or the survivor of them, his executors and administrators, should and would well and truly pay, or cause to be paid, unto the said twelve patentees, or persons in whom the said letters patent were vested, the sum of £— of lawful English money, for every ton of soap, which they the said Samuel Guppy and Philip Protheroe, or the survivor of them, should from time to time manufacture by means of the said patent process during the term for which the said license was thereby granted, and should and would make such payments on the first day of every month; the first of such payments to be made on the first day of August then next, and should and would for the first year of the said term, pay unto the said twelve patentees or persons, in whom the said letters patent were vested, their executors, administrators, or assigns, the sum of £— per week, whether or not so much as — tons of soap weekly should have been manufactured by the said Samuel Guppy and Philip Protheroe, or the survivor of them, under and by virtue of the said license thereby granted. And further, that they, the said Samuel Guppy and Philip Protheroe, or the survivor of them, should and would at or before the respective times appointed for such payments as aforesaid, deliver, or cause to be delivered, unto the said twelve patentees, or persons in whom the said letters patent were vested, their executors, administrators, or assigns, or unto some person or persons duly authorized by them, in writing, under their hands, to receive the same on their behalf, a just and true account, in writing, of all the soap which should have been manufactured by them, the said Samuel Guppy and Philip Protheroe, or the survivor of them, for the month next preceding the rendering of every such account, together with true copies of all returns made and rendered to the Excise for the like period, and should and would verify any and every such account and copy respectively, by affidavit or suitable declaration, if required. And further, that in case they the said Samuel Guppy and Philip Protheroe, or the survivor of them, should at any time or times refuse or neglect to deliver or cause to be delivered such a just and true account as hereinbefore mentioned, May.

at the times and in the manner hereinbefore appointed for that purpose, or should wilfully or knowingly misstate or omit any such account, then, and in every such case, and so often as the same should happen (subject to all other rights and remedies for breach of the said covenant or otherwise), the said Samuel Guppy and Philip Protheroe, or the survivor of them, his executors or administrators, should and would, on demand, well and truly pay or cause to be paid unto the said twelve patentees or persons in whom the said letters patent were vested, their executors, administrators, or assigns, in addition to the moneys which would otherwise become payable to them, under and by virtue of these presents, the sum of £— as and for liquidated damages. Provided always, and it was hereby declared and agreed by and between the said parties thereto, that it should be lawful for the said Samuel Guppy and Philip Protheroe, and the survivor of them, at any time after the expiration of one year from the date thereof, to relinquish and give up the license thereby granted, on giving to the said twelve patentees as aforesaid, their executors, administrators, or assigns, three calendar months' previous notice in writing thereof, and that upon and after the expiration of such notice, the said license should cease, determine, and be utterly void, to all intents and purposes whatsoever, but without prejudice, and except as aforesaid. And the said Samuel Guppy and Philip Protheroe, for themselves jointly, and each of them separately, did further covenant with the said twelve patentees, or persons in whom the said letters patent were vested, their executors, administrators, and assigns, that they the said Samuel Guppy and Philip Protheroe, or the survivor of them, should not at any time or times thereafter, wilfully or knowingly do, or cause, or permit, or suffer to be done, or wilfully or knowingly concur in or do any act, deed, matter, or thing whatsoever, contrary to the restrictions and provisions contained in the said letters patent, or in the said license, or whereby, or by reason whereof, the validity or continuance of the said letters patent, or the rights and privileges thereby granted, or any of them, could or might in any respect be endangered or called in question, but should and would by every lawful means in their power, assist the said twelve patentees or persons in whom the said letters patent were vested, their executors, administrators,

Protheroe

and assigns, at their expense, and to be done under their direction, in supporting the same, and in the use and exercise of the said invention; and also give notice to them of any infringement of the said letters patent by any person or persons whomsoever, within the knowledge of the said Samuel Guppy and Philip Protheroe, or the survivor of them, as soon as the same should come to their or either of their knowledge; and should and would keep and preserve regular account books, and therein daily cause just and true entries to be made of all soap manufactured by them or either of them, from time to time as aforesaid, and permit and suffer the said twelve patentees or persons in whom the said letters patent were vested, their executors, administrators, and assigns, and their clerks or agents, from time to time, and at all seasonable hours in the day, to take copies thereof and extracts therefrom. Provided nevertheless, and it was thereby further agreed and declared, that if the said twelve patentees or persons in whom the said letters patent were vested, their executors, administrators, or assigns, should at any time thereafter during the said term of fourteen years, give or grant any license or authority to any other person or persons to use or exercise the said invention in England, Wales, Scotland, or Ireland, without similar restrictions and corresponding minimums and maximums, with the excise returns in the ratio thereinbefore stated or mentioned, to the said Samuel Guppy and Philip Protheroe, or at a less rate per ton than the sum of £— thereinbefore reserved, that then and from thenceforth the covenants and restriction thereinbefore contained, so far as the same should be omitted, modified, or altered in any such future license to be granted as aforesaid, should be relinquished and become null and void as against them the said Samuel Guppy and Philip Protheroe, and they should from and after the granting of any such license as aforesaid, be bound to pay, under and by virtue of the present license, such sum only per ton of soap, to be thereafter manufactured by them, as any future licensee should be bound to pay by virtue of any such license to be granted as aforesaid, it being the intention of the parties thereto, that the said Samuel Guppy and Philip Protheroe, should be in all respects on as favourable a footing as all other licensees; and the said twelve patentees or persons in whom the said letters patent were so vested as aforesaid, severally and respec-

May.

tively, and for their several and respective executors, administrators, and assigns, did covenant to, and with the said Samuel Guppy and Philip Protheroe, and the survivor of them, and the executors and administrators of such survivor, that they the said twelve patentees aforesaid, their executors, administrators, or assigns, should not, nor would nor should, nor would any or either of them at any times or time, during the remainder of the said term of fourteen years, for which the said letters patent were granted as aforesaid, if the license thereby granted should so long continue, make or grant any licenses or license whatever, to any persons or person to use or exercise the said patent invention, in the said city of Bristol, or within thirty-five miles thereof, without the consent of the said Samuel Guppy and Philip Protheroe, or the survivor of them, first had and obtained. And, further, that the said twelve patentees respectively, their respective executors, administrators, and assigns, should not, nor would nor should, nor would any or either of them at any times or time during the remainder of the said term of fourteen years for which the said letters patent were so granted as aforesaid, if the license thereby granted should so long continue, themselves or himself, use or exercise the said patent or invention, or manufacture in the said city of Bristol, or within thirty-five miles thereof. Provided always, and it was thereby declared and agreed by and between the said parties, that if the said Samuel Guppy and Philip Protheroe, or the survivor of them, should omit, refuse, or neglect to commence and continue the manufacture of soap at the time, and according to the stipulations and agreements thereinbefore contained, or should make default or breach in the performance of any of the other clauses, covenants, and agreements therein contained, that then, and in any such case, it should be lawful for the said twelve patentees, or persons in whom the said letters patent were vested, their executors, administrators, or assigns, to give unto the said Samuel Guppy and Philip Protheroe, three months' notice in writing under their respective hands to revoke and make void the license, power, and authority, thereinbefore given and granted; and that henceforth every covenant, clause, matter, and thing therein contained, should cease, determine, and be void, save and except, and without prejudice to the right of them, the said twelve patentees or persons

Protheroe v.

in whom the said letters patent were vested, their executors, administrators, or assigns, to recover all and every sum and sums of money which should be then due and payable to them, under and by virtue of the present license.

Under the said license the said Philip Protheroe and Samuel Guppy have used and exercised the said patent invention within the said city of Bristol, and such other places within thirty-five miles thereof, as they have thought fit, and they have since assigned the said license and the benefit thereof, to or in trust for a company or co-partnership consisting of more than twelve persons who are now using and exercising the same, and have duly paid the rents made payable by virtue of the said license.

On the 2d day of July, 1839, the said twelve patentees or persons in whom the said letters patent, and the liberties and privileges thereof, were so vested as aforesaid, gave and granted twelve other similar exclusive licenses to use and exercise the said patent right and invention in twelve several districts other than the said city of Bristol, and places within thirty-five miles thereof, of which said twelve licenses, eleven were granted, severally to eleven individuals (that is to say, each to one distinct person), and the twelfth was granted to a certain partnership consisting of thirteen persons.

The districts covered by the licenses are parts of England only. They do not comprise the whole of England.

The following questions were therefore submitted to the Court of Exchequer:—

1. Has the grant of the said first-mentioned exclusive license to the said Philip Protheroe and Samuel Guppy, invalidated the letters patent of itself, without reference to the subsequent facts?

2. Has the assignment to, and vesting of, the said first-mentioned license in the said partnership of more than twelve persons, invalidated the letters patent of itself, and without reference to the other facts stated?

3. Has the grant of the said twelve last-mentioned exclusive licenses, or of any, and which of them, invalidated the said letters patent?

4. If the third question should be answered in the affirmative, would the result be the same if the last of the twelve licenses had been granted to a less number than twelve persons?

5. If the grantees of all the licenses were to coalesce,

May

and become jointly interested in such licenses, would the letters patent be thereby invalidated, if not otherwise invalidated?

6. Would the letters patent, if not otherwise invalidated, have been so, if the districts, covered by the licenses, had included the whole of England, Wales, and Berwick-upon-Tweed?

7. Would they have been so, if such districts had included the whole of England, Wales, Berwick-upon-Tweed, and the Colonies?

Mr. Roupell opened the case, and shortly stated the questions.

The Lord Chief Baron.—On which side are you?

Mr. Roupell.—For the licensee.

The Lord Chief Baron.—We will hear the other side.

Mr. Rotch.—The principal question is, if all licensees unite, the districts covered by licenses being all England, they have an interest equal to patentees?

Baron Parke.—A license is no interest in the patent. The answer to the first question proposed is clear; then why should they not unite?

Mr. Rotch.—A patent is a monopoly. First question is clear for license, I admit; but the Vice-Chancellor thought the circumstance of a combination amongst all the licensees might affect the patent. If your Lordships are so clear upon the point, I do not desire to occupy time in argument. I am well satisfied that such is the Court's decision. The question is one of great public importance.

Baron Parke.—A licensee has a distinct interest. How can a combination affect the patent right? The answer to all the questions must clearly be in the negative.

The Lord Chief Baron.—The questions will be answered in the negative.

And their Lordships subsequently gave their answers as follows:—

"We have heard this case argued by Counsel, and considered the same, and are of opinion—

"1. That the grant of the first-mentioned exclusive license to the said Philip Protheroe and Samuel Guppy did not invalidate the letters patent.

"2. That the assignment to, and vesting of, the said first-mentioned license in the said partnership of more than twelve persons, did not invalidate the letters patent.

"3. That the grant of the said twelve last-mentioned

Protheroe v. Gray.

Gillett et al. v.

exclusive licenses, nor any of them, did not invalidate the said letters patent.

"4. That if all the grantees of all the licenses were to coalesce, and become jointly interested in such licenses, the letters patent would not be thereby invalidated.

"5. That the letters patent would not be invalidated, if the districts, covered by the licenses, had included the whole of England and Wales, and Berwick-upon-Tweed.

"6. That they would not have been so, if such districts had included the whole of England, Wales, Berwick-upon-Tweed, and the Colonies.

"Dated this 20th day of November, 1839.

(Signed) "ABINGER.
"J. PARKE.
"J. GURNEY.
"R. M. ROLFE."

And subsequently the Vice-Chancellor gave judgment as follows:—

The plaintiffs are entitled under the deed or indenture, dated July 1, 1839, in the pleadings mentioned, and the covenant in such indenture contained to have granted to him an exclusive license for the use and exercise of the invention of certain improvements in the manufacture of soap, in the pleadings mentioned, within the city of Bristol, and at such other place or places within thirty-five miles therefrom, as described in the map, with a compass, having Bristol for its centre, as the plaintiffs may think proper, for the term, and upon and under the terms, stipulations, covenants, and agreements, contained and expressed in the same indenture: And decree, that the defendants do grant and execute to the plaintiffs such license accordingly, and that the plaintiffs do execute a duplicate or counterpart thereof, and refer it to the Master in rotation to settle and approve of such license, in case the parties differ about the same.—Liberty to apply.

GILLETT AND ANOTHER *v.* WILBY.

In the Court of Common Pleas, Guildhall. Before Mr. Justice Coltman and a Special Jury.—December 13, 1839.

THIS was an action brought by the plaintiffs against the defendant for infringing a patent granted on the 21st day

Wilby.

of December, 1836, for Improvements in that description of vehicles called Cabs.* The declaration was in the usual

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—Now know ye, that in compliance with the said proviso, we, the said William Stedman Gillett and John Chapman, do hereby declare the nature of our invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof, reference being had to the drawings hereunto annexed, and to the figures and letters marked thereon (that is to say):—

"Our invention relates, First, to the application of a driving seat or box (or such like convenient support for the driver) to the back of such description of two-wheeled one-horse vehicles as are so constructed that the passengers enter in front, and suitable for cabs.

"Secondly, in a mode of applying and working of a window or blind to cabs.

"Thirdly, in the mode of applying a safety frame to cabs.

"Fourthly, a mode of applying the springs of two-wheeled one-horse vehicles used as cabs.

"Fifthly, in a mode of applying a suitable instrument to cabs to ascertain the distance at any time, gone by the cab, whereby the same may be indicated to the passenger and to the owner of the vehicle, and thus produce a check on the driver. And in order that our invention may be most fully understood and readily carried into effect, we will proceed to describe the drawings hereunto annexed.

"*Description of the Drawings.*

"Fig. 1, represents the side view of a cab having parts of our improvements applied thereto.

"Fig. 2, a back view.

"Fig. 3, is a plan partly in section.

"Fig. 4, is a section of part of the body of the vehicle; and,

"Fig. 5, shows part of a front view.

"In each of these figures, the same letters of reference indicate similar parts; *a, a,* being an ordinary cranked axle. *b, b,* wheels, which, from the arrangement of the various parts, we are enabled to have of large dimensions, as is shown. *c, c,* the two side springs which are affixed to the axle and connected to the iron standards, *d,* which are affixed to the body of the vehicle, and to the under or what we called the safety-frame, *e,* it offering a support in the event of a wheel coming off, or of a horse falling or rearing, as will readily be understood on inspecting the drawing, such framing also carries the shafts, and also a platform for the passengers to step on in entering the vehicle, and it will be seen that this safety-frame is (together with the shafts and body of the vehicle and driver's seat) carried by the springs. *f, f,* are two doors, which we prefer should respectively open towards the wheels, thus offering protection to the passenger in the act of entering, and prevent the dirt or mud on the wheels being touched by the clothes or dress, and there should be suitable straps to prevent the doors opening too wide as is well understood by carriage builders. *g,* is a projecting piece of timber or framing affixed to the under part of the body of the vehicle to which the spring, *h,* is affixed, as is clearly shown in the drawing. *i,* is a small box on which the driver's feet are placed either in sitting or standing, into which may be stowed a feed of corn or hay. *j,* is the driver's

Gillett et al. v.

form, the allegation being that the defendant did use and put in practice one of the said description of vehicles

seat. *k*, *k*, are hooks on which he can place his reins, and, *b*, is a support at the front for the reins. And it should be stated that in making or constructing such a vehicle, care should be observed that the weight on the horse should be as little as possible, and for this purpose that the carriage should be, as nearly as possible, in a state of balance on the axle when the driver is in his seat; hence, when passengers are in the vehicle they sitting directly over the axle will not materially alter the balance; hence, the horse will not have to bear much weight on his back, which is important in such vehicles as cabs, which are required to go at considerable speed. e^1, e^1, are steps for the driver to his seat. By this application of means of driving from behind, the front of the cab is left open, and the view from within is uninterrupted, in addition to which passengers may enter and leave the cabs with greater facility than when the driver's box was at the top, and the feet of the driver descending in front of the passengers, which is a construction of carriage now in general use. *m*, is an opening in the head or upper part of the body of the vehicles, there being a door or cover by which means the driver can conveniently communicate with the passengers, or the passengers with the drivers. We would remark that although we have shown an arrangement of axle, wheels, springs, shafts, and a body of a carriage, and such an one as we consider the most suitable for the purposes of a cab, at the same time we do not confine our invention to the use of such combination, as variations may be made; neither do we claim the same when uncombined with parts constituting our invention. *n*, *o*, are two glazed frames or windows, the upper one, *n*, moving on suitable axes at each side of the body of the vehicle, as is clearly shown; on one end, there is affixed a cranked handle by which the driver can, from without, give motion to the glazed frames, *n*, *o*, to open or close it. The frames, *n*, *o*, are hinged together, as is shown in the drawing, they are therefore capable of folding up. *p*, is a curved inclined plane, one on each side of the body of the carriage against which the projection, *q*, of the frame, *o*, rests when down, and in the operation of folding the frames, the projections, *q*, slide along the curved inclined planes, till such time as the arms, *r*, which are affixed to the frame, *o*, come in contact with the curved surfaces, *s*, fixed at the top of the carriage, but on the inside. By this means when the handle is moved in the direction of the arrow, the frames, *n*, *o*, will fold up within the carriage, and will be retained in such position by the stud, *t*, on the crank being held by the spring catch, *v*, or by any other suitable catch, and the passenger will also be able to open or close the frames, *n*, *o*, from within, as the catch, although suitable to hold the crank handle from moving, will readily give way when the hand is applied to the frame, *o*, by the passenger within, or to the crank handle by the driver from without. In combining the safety-frame and mode of entrance in front for passengers, suspended on springs in combination with the body of the carriage, having the driver's seat on the top, and at the front of the vehicle in contradistinction to the mode of applying such frame to the axle as now employed, and only suspending the body of the carriage of springs with the driver's seat on the top and in front thereof; it will be desirable to have the carriage in a state of balance on its axle as is described,

Wilby.

called Cabriolets, with the said improvements, and that the Cabriolet so used by the defendant did imitate

when the driver is behind; in order to accomplish this object the cranked axle is to be so formed, that the springs may be horizontal, and the cranked axle stand off at an angle, as is shown in the drawing; and in whatever way the axle is arranged, whether vertically, as when driving from behind, or at an angle, when driving from a seat in front, and at or near the top of the vehicle, the springs are to be so arranged, that the side springs and back springs are above the passenger's seat, as is shown in the drawing, by which ease and comfort will be obtained to the passengers; and such mode of placing the three springs forms one feature of novelty in cabs.

"We will now describe the fifth part of our invention, which, as before stated, relates to a mode of applying an instrument to cabs, for measuring the distance passed over.

"Fig. 6, shows a back view of part of a cab-axle, and the nave of a wheel, to which are applied part of the apparatus for giving motion to a series or train of wheels on the movements of the wheels of the cab along the road.

"Fig. 7, is a plan of fig. 6.

"Fig. 8, is a section of the axle and parts of the apparatus.

"Fig. 9, is a section of the seat, on which passengers sit; the instrument for measuring distance being under the same.

"Fig. 10, is a section of the passenger's seat, looking from behind.

"Fig. 11, plan of the instrument for measuring its position, under the seat of the passenger, is more clearly seen in fig. 7.

"Fig. 12, shows the graduated face of the instrument, on which is indicated the distance gone. The whole of this instrument is placed under the passenger's seat, and is to be inclosed, that the driver cannot interfere with the apparatus. This apparatus consists of a train of wheels, as is well understood, and is clearly represented in the drawing, and forms no part of our invention, which relates only to the mode of actuating the same, by the motion or travelling of the cab, notwithstanding the varying distances at which the body of the vehicle, and consequently the seat of the passenger may be, in respect to the axle of the wheels of cabs, owing to the play on the springs.

"On the nave of one of the wheels, is affixed an eccentric, A, which also constitutes one of the hoops of that nave. B, B, are brackets, which are affixed to the axle and side spring of the vehicle. C, is a sliding bar, which is bent at the two ends, so as at all times to touch and be worked by the eccentric, A; and the bar is further bent, in order to be out of the way of the cranked axle of the vehicle. It will readily be seen that in the revolution of the wheel of the cab, the bar, C, will be slided to and fro; and by the means hereafter described, such motion is communicated to the train of wheels, for measuring the distance gone by the cab. D, is a lever moving on a fulcrum, at D^{1}; this lever is forked at its end as is shewn at fig. 7, and embraces the curved plate, E, affixed to the bar, C, such plate being curved, in order to allow for the lengthening of the spring when pressed down. F, is a spring, which at all times presses the lever D, to its work.

"At the other end of the lever is attached, by a pin-joint, the connecting rod, G, which, at the other end, is attached by a pin-joint, to

Gillett et al.

and resemble the said improvement. The pleas were that—

First, that the defendant had not infringed.

the arm on the axis, or spindle, H, moving in suitable bearings. I, is another arm, affixed to the spindle, H; and on the end of such arm, I, is formed the plate, J, which is formed into an inclined plane, and the arc of a circle (by which means, notwithstanding the varying distances of the axle, and the instrument for measuring the parts, will work correctly), which, acting under the cranked end of the driver, K, moves the ratchet-wheel, L, of sixty teeth, one tooth for each revolution of the wheel on the road, the cab-wheels being five feet in diameter. On the axis of which ratchet-wheel is affixed a pinion of twenty teeth, which takes into and drives the wheel, M, of fifty-six teeth. On the axle of the wheel, M, is affixed the screw, N, which takes into and drives the wheel, O, of ninety teeth; and on to the axis of the wheel, O, is affixed the hand of the dial, or graduated face, which is graduated to measure forty-five miles; the bearing and mode of fixing the same being clearly shewn in the drawing, no further description will be necessary.

"In case it be desired to have a dial to be seen by the passenger, we apply the following additional apparatus. On the axle of the wheel, M, is affixed a cam, P, which in its revolution actuates the lever, Q, moving on a fulcrum at Q^1; and to the other end of the lever, Q, is attached, by a pin-joint, the connecting rod, R, which will require to be bent, in order to lie within a tube at the back of the carriage, and under the lining thereof; this rod, R, at the other end, is attached to the axle of a double lever-driver, S, by means of an arm, which is affixed to, and projects from, such axle of the lever-driver, the axle moving in suitable bearings, as is clearly shewn in the drawing: hence the up and down movement, communicated by the rod, R, will cause the lever-driver, S, to move and alternately act on the teeth of the wheel, T, which is on the axle, V. And W, is a ratchet-wheel, affixed to the wheel, T, and moves therewith, there being clicks, or catches, X, will prevent the ratchet-wheel moving in more than one direction: these clicks, or catches, are affixed to the axis, V, and are capable of moving therewith (such motion being obtained by the friction of the wheels, T, W, against the wheel carrying the clicks), whilst the wheels, T, W, can move independent of the axle, they being actuated by the progress of the vehicle. Y, is a dial, or face, within view of the passenger, but to be inclosed in a glazed frame, so as not to be touched. The dial, or face, Y, is affixed to the axle, V, and can be moved therewith; but in such movement the wheels, T and W, are retained by the lever-driver, and at the same time, the face, or dial, Y, can only be turned back, in order when a passenger gets in, to set the pointer at zero; the clicks, or catches, and the lever-drivers, preventing the dial being turned forward, hence the passenger cannot be cheated by the driver, as to the distance gone. Z, is a face, or dial, towards the driver, there being a handle and pointer affixed to the axle, V, for the driver to set the dials at zero, at starting with a passenger; and there is a stop, shewn in the drawing, to prevent the driver forcing the dials back beyond zero. The dials, it will be seen, are graduated for ten miles. It will be evident, that where the cab-wheels are of large or less diameter, allowance must be made in the train of wheels, to measure the distance gone by the horse; and we would remark, that

Wilby.

Second, that the invention was not new; and third, that the plaintiffs were not the first and true inventors. The notice of objections under the Statute were in substance the same as the pleas.

Mr. M. D. Hill and *Mr. Shee* were for the plaintiffs, and *Mr. Ball* appeared for the defendant.

Mr. Shee opened the pleadings.

Mr. Hill proceeded to state the case on the part of the plaintiffs as follows:—May it please your Lordship: Gentlemen of the Jury, I have the honour to appear before you on behalf of the plaintiffs in this cause,—Mr. William Stedman Gillett, and Mr. John Chapman. Mr. Gillett is a private gentleman, a man of science, who has devoted a great deal of attention to the subject of this patent. Mr. Chapman is a man, not only of science, but of practical science, and has constructed these cabs and many other kinds; he, in conjunction with Mr. Gillett, gave great attention to the subject of improving the street

---

variations may be made in the arrangements of the parts, without departing from our invention, which relates to the mode of combining the parts which actuate the train of wheels, correctly, notwithstanding the varying distance between the axle and the position in which the measuring instrument is placed.

" Having thus described the nature of our invention, we would have it understood, that we do not claim any of the parts separately, nor combined, other than is herein particularly described and claimed as of our invention. And we do claim,

" First, the application of a driving seat, or box (or such-like convenient support for the driver), to the back of such description of two-wheeled one-horse vehicles as are so constructed that the passengers enter in front; and suitable for cabs as above described.

" Secondly, we claim the mode of applying and working of a window, or blind, to cabs, from the outside, as above described.

" Thirdly, the applying a safety-frame and platform (by which the passengers enter in front) on springs, when the driver's seat is placed either at the back, or on the top, and in front, as above described; but we do not claim the application of such safety-frame and platform when not placed together with the body of the vehicle on springs; neither do we claim the application of the platform, by which the passengers enter in front, when on springs, when driven from a seat at the side, as has been done in a cab before.

" Fourthly, the mode of applying the side and back springs of cabs, whereby the passenger's seat is below the position of the springs, as above described.

" Fifthly, the mode of communicating the motion of the wheel of a cab to a suitable train of wheelwork, for measuring the distance gone, as above described.—In witness whereof, &c.

" WILLIAM STEDMAN GILLETT.
" JOHN CHAPMAN."

Gillett et al.

cabriolets, and they united their talents on the subject, and brought to perfection the carriage to which I shall have to call your attention. Gentlemen, the defendant, Mr. Wilby, is a proprietor of these public carriages, and lets them out to drivers. Gentlemen, I am sure you must all have been aware, that the attention of carriage builders has been very much drawn, and most properly so, to the improvement of that humble, but most useful carriage, the street cabriolet, or, as it is shortened into, cab. The street cab, when it first came over from France, was a species of open carriage; there was a head to it, which was generally let down, and the driver sat beside his passenger (his fare); that was shortly improved into a separation between the driver and his fare, the driver sitting at the side of the carriage. However, that made no improvement in what was a most material defect in that carriage, namely, its want of safety, as many, probably, who are now hearing me, could say experimentally, was the case with the old street cabs. Various improvements were made: one of the first, if I recollect, was the giving us a sort of carriage, which I still see sometimes in the street,—a sort of slice off an omnibus, which was a great deal more safe, in some respects, than the original cab. Some time after that, you probably observed a cab in the streets, which excited very considerable attention, and, although imperfect in its execution, yet certainly showed a great deal of science and mechanical ingenuity in its design. I mean the cab which was called "Hansom's Cab," one with very large wheels, and a large frame-work, to which the shafts were attached, and where the passengers sat rather low, and where, from the very view of the carriage, you might see clearly that it was not liable to be turned over; if the horse fell down, the frame-work of the carriage came quickly to the ground, and the passengers could scarcely be injured. That certainly was a very safe carriage, it was called the "patent safety carriage." But, Gentlemen, it was exceedingly injurious to the horse, for the frame-work was not upon springs; the frame-work was on the same principle as the pole of a common cart, and as far as springs are valuable, this invention only had the benefit of the springs for what was strictly the carriage part. All this heavy frame-work of shaft and so forth being not on springs, and that the scientific men will inform you is a very great

Wilby

defect indeed, the horses were constantly injured by the working of the shaft, for the want of these springs. Then, Gentlemen, the great object to be attained, was, safety to the passengers in the first place, safety to the driver in the second place, ease to the horse in the third place, which operated thus in favour of the passenger: that whatever made the carriage easy to the horse, enabled him to go with the greater speed; thus, the horse obtained ease and safety also, as I shall show you, from the improvement that was made,—not so liable to be thrown down by any weight suddenly pressing on him; the passenger, I shall show you, by the improvement, is in a situation as safe as he was before; the driver, I shall show you, who has been removed from the front of the carriage to the back,—his safety is also secured, and certainly it is much better to have an uninterrupted view than to have the legs of one of these drivers dangling in your face, while you are sitting in the carriage. Now, Gentlemen, to accomplish all these objects required a great deal of study, and a great deal of mechanical ingenuity; and the result of that study, combined with the ingenuity which has been exercised upon the subject, has been the production of what is now called "Gillett and Chapman's safety-carriage," of which, Gentlemen, I have a model here, which, I trust, I shall be able shortly to explain to you. Gentlemen, in order that the passenger should sit low, and that the centre of gravity should be low in the carriage, which, of course, I need not say contributes to its safety, and to prevent it from being overthrown, in Hansom's cab the axle was not a thorough axle,—there was no thorough axle uniting the two wheels, but each wheel was fastened to so much of the frame-work as was on its own side of the carriage; there was inconvenience in that, and injuries resulted from its use. The change which has been made from that, although it is not a change for which we claim a patent, because the thing itself is old, is, that, instead of this divided axle, or rather two-sided axle, each fastened to its own side of the frame, we have what is called the crank axle. And while, by this means, we get rid of the inconvenience of Hansom's divided axle or no axle, we also obtain the means, by being cranked, of still keeping the passenger low in the vehicle. If you will observe, Gentlemen, the axle crosses the carriage just under the seat of the passenger; the passenger sits as it were on a portion

Gillett et al. v.

of the axle covered with the seat, so that he is a little below the centre of the wheel, and that will be found to be practically a great advantage. But, then, Gentlemen, as I before told you, the frame-work in Hansom's carriage, to which the shafts were attached, and which goes under the carriage and comes up to the shafts, were, in Hansom's carriage, not on springs, and the consequence was, that the horse was struck whenever the carriage was going fast and came to an obstacle: the horse would have sometimes the weight thrown suddenly on his back, sometimes the weight thrown suddenly on the belly-band, sometimes there would be a lateral motion,—in point of fact, the poor animal was so beaten upwards, downwards, and sideways, that he was very quickly worn out. Now, Gentlemen, the frame-work in the plaintiffs' patent is upon springs, that is to say, it is suspended, together with the carriage, by springs, and the foundation of the springs, so to speak, the side springs, which are of the main-spring of the carriage, these rest of course on the axle, and then you will find that the frame is suspended so as to rest on these side springs. Gentlemen, in Hansom's cab, the coachman sat in front; this, in the first place, was dangerous for him, but in the next place it put his weight in a situation unfavourable for that degree of lightness and balance, which is so important in a carriage. He is now put behind, and the weight is so calculated that when he is up, although the carriage is empty, it about balances itself, and this balance is not disturbed when the passenger gets into the cab, because he sits on the axle, and therefore he has very little to do with the equilibrium, he can hardly disturb it do what he will. It is so managed that the driver has no necessity to get down, the passenger himself easily opens a door which opens against the wheel, and therefore protects his clothes from injury. When he is in, if it should rain, the driver without getting from his seat has the means of letting down a German shutter by machinery, which is within his command; that is a very great convenience. The driver may have a communication with his fare, and know his wish as to whether the shutter should be up or down, or when he wishes to stop; there is a little door on the top which is open, and through which the driver speaks. Gentlemen, I think that, for the purposes of this case, and subject to any further explanation which may be given by gentlemen who will be

Wilby.

called before you, and who are much more able to speak to matters of science than I am, that I have sufficiently explained to you, not only what are the objects to hold in view—which are quite obvious and require no observation, but how they have been kept in view and accomplished by the carriage, which has been produced by these gentlemen. Now, Gentlemen, it is quite true that almost everything which I have described is, in its separate part, old; there is no great magic, it may be supposed, in putting the seat of the driver behind; the driver's seat has been behind, but then how? why, the driver's seat was behind in a carriage which had not the facility of admitting the passengers in front, but which admitted them behind. Therefore, Gentlemen, we claim the carriage in which the passengers are admitted in the front, and the driver's seat at the back. It will not do to tell us there have been other two-wheeled carriages, in which there has been a little seat behind the carriage for the servant; that it is not a driver's seat,—the seat must be of course in such a position as that the reins may come without interfering with the passenger. Then, again, springs to carriages are old, but this species of spring which unites this particular kind of frame-work with the ease which is produced by having all that rest on the axis on springs; that, again, is new. Then the part about the shutter is new; and there is another part which I have not hitherto mentioned, and that is, there is attached to this carriage, what the inventor calls an odometer, by which the proprietor, when it comes back into his coach-house at night, may know how many miles it has run in the day. Then, again, this odometer is so managed, as that the passenger could, by placing the dial in a particular way, tell how far he has been driven, and, consequently, the amount of the fare. However, I do not think that this will very much trouble you on the present occasion, because, in the infringement on which I am going to speak, they have left out the odometer, and they have left out the moving shutter: they have pirated the other parts of our invention. But before I leave our own invention, let me call your attention to what I am told is an important improvement, and that is, that the passenger sits below all the springs. I am told it is an important matter in carriages to have the springs higher, if possible, than the seat, or where the principal weight is. If the springs are

Gillett et al. v

lower, they are liable to that lateral motion which is so troublesome. Now, Gentlemen, so much then for our invention, and for what we claim; and I must now call your attention very shortly to what has been the conduct of the defendant in the infringement of our patent. Mr. Wilby, as I before told you, is a proprietor of public cabs. Now, I shall show you that he had manufactured for him, and used,—and his Lordship will tell you, that the using is a piracy as well as the manufacture,—that either is a piracy; but we shall show that Mr. Wilby used a carriage which is an infringement on our patent. Gentlemen, I shall not show you he has made so good a carriage as ours,—and those among you who may have had experience in piracies of patents, know that the common mode is to imitate, but to attempt to avoid imitating so closely as to draw attention to the infringement and imitation. The consequence is, that there are changes made, but those changes are usual; and in the present case, it so happens, altogether deteriorations. The pirate is seldom an improver; and when he makes changes to hide his imitation, nineteen times out of twenty it happens those changes are for the worse instead of for the better; not that it is material, because he has no right to use the invention, even to improve upon,—he has no right to do that until the patent is out. Now, Gentlemen, here is the driver's seat behind [referring to and describing a model of defendant's cab], here are the passengers admitted in front,—this is a model that was made from drawings which were taken from his cab; and the accuracy of the model will be spoken to by witnesses: here the driver's seat is behind, while the passengers are admitted in front; all that advantage is gained, the advantage of safety to the driver, of taking him out of view, from intercepting the view of the passenger, putting him behind, when the carriage gets the advantage of equilibrium; all that, you see, is taken. Then, again, the placing the carriage on a frame-work, which frame-work is united to the spring-frame of that carriage precisely in the manner, and upon the principle of the patent carriage,—that is taken; it is quite true the frame is not so long, either before or behind, but that is only a difference in degree, and no difference in principle. Gentlemen, I have shown to you the carriage which we say is an imitation of ours, and an infringement upon our inven-

Wilby

tion. The same principle is observed with the springs: they are not placed quite so well, but the advantage is gained, inasmuch as it prevents the weight being so much above the spring as will give way to the lateral motion. I do not know whether the passenger sits exactly below the spring, or he is about the level; it may be he is a little above: the principle is to bring them as near together as you can, as low down as you can, in order to avoid the lateral strain and vibration; and, Gentlemen, all who have studied the subject will say this is a clear infringement of the patent. Now, Gentlemen, the question will be for you, first of all, whether this is an infringement; and, secondly, what damages have resulted to the plaintiffs from that infringement. Upon the question, whether it is an infringement at all I have no more to say to you at present,—upon the question of damages I have something to say. Now, Gentlemen, the public have marked their approbation of it by selecting it from the stands; and that is proved in rather a curious way. The old plan is, to a considerable extent, persevered in, of letting cabs day by day; and it is found, that while the old form of cab only obtains from 7*s.* to 9*s.* a-day, this species of cab will obtain from the driver from 18*s.* to 20*s.*, and even 22*s.* a-day. Now, that marks that the driver knows which cab is most acceptable; and these sums are as good a criterion as you can have of the relative merits. We calculate they have run a million and a half of miles, and carried about 600,000 persons, and no accident worth speaking of at all has occurred. Now, Gentlemen, my clients do, therefore, claim from the Jury to be protected in this useful, although perhaps humble, invention. In the station of life of gentlemen whom I am addressing, it is perhaps not very important whether the public cabs are good or bad; they have their own carriages, and they have, therefore, more commodious means of transporting themselves from place to place; but in the middle ranks of society, and among those whose business calls them suddenly from one part of the town to the other, it is of the highest and deepest importance that there should be the very best vehicle which art and science can produce. When this has been done, surely the inventor is to reap his reward; and certainly a Jury will protect him against those who, without having

Gillett et al. v

his ingenuity, his labour, or the expenditure of his time and capital, wish to receive that reward which only in justice belongs to him.

John Harrison produced an official copy of the plaintiffs' specification; and

Henry Haynes proved that the cab alleged to be the infringement of the patent belonged to the defendant.

Henry Dolby, sworn:—Examined by *Mr. Hill.*—I am foreman to the Patent Safety-Cab Company: the last witness came to me at York-mews, in the defendant's cab. I accompanied him to Mr. Duncan's, the solicitor for the plaintiffs. I afterwards went to Mr. Carpmael's office, in Lincoln's-inn, and remained there while his draftsman made a drawing of the cab. I obtained the drawing, and made a copy of it, from which I made the model now in Court, which is a perfect copy of the defendant's cab. The name on the cab was John Wilby, 495.

Cross-examined by *Mr. Ball.*—There was a cab sent out from the Company's yard in 1836, with a seat behind; it was only out once, and was merely for experiment; we endeavoured to find out what effect it would have on the horse.

Mr. Justice Coltman.—Sent out once, merely as an experimental cab?

Witness.—As an experimental cab, to try the effect it would have on the horse; command of the horse; and so forth. It was about twenty minutes out, and brought home again. It might be in the September previous to the patent being granted. The odometer has been used in one or two cases; we do not use it generally; it has been used, and successfully. The blind is used to all the cabs.

Re-examined by *Mr. Hill.*—There are fifty cabs made according to the patent now in use. They answer exceedingly well, both as regards their safety and speed. There is less wear with the horse: two horses, with the present cab, will do as much work as three would with Hansom's cabs. There has not been a single case of a passenger having been injured by the plaintiffs' cab. I have calculated that they have travelled over a space of a million and a half miles, and have carried about 600,000 passengers.

Wilby

William Brooks, sworn:—Examined by *Mr. Shee.*—I am a draftsman, in Messrs. Poole and Carpmael's office, Lincoln's-inn. I remember the defendant's cab being brought there; it was in October, 1838. I made a sketch of it; the model is made accurately, and corresponds with the drawing which I prepared. The name of John Wilby, 495, was on the cab.

William Carpmael, sworn:—Examined by *Mr. Hill.*—The specification of the plaintiffs' patent was drawn by me. At the time the patent was taken out, I had never heard of any cabs upon the same construction. When the defendant's cab was brought to my office, I carefully examined it, and directed a drawing to be made of it,—the drawing prepared by Mr. Brooks is very accurate. The cab is precisely on the same principle as the plaintiffs' patent. There is great advantage in putting the driving-seat behind, compared with others which have existed, and were, in fact, the cabs used formerly. The principle was one where the driver's seat was on the side, and the others where the driver sat with his feet downwards, before the face of the passenger. In respect of the one with the seat at the side, the man was always obliged to leave his horse to get down to assist the passengers out, and the horse very often started off. In reference to the seat in the front, the driver was in a very dangerous position, and was necessarily very often thrown; but it was highly disagreeable to passengers with the seat in front, because of the dirt splashing in the passenger's face. There is great convenience in the man sitting behind; he has always the reins in his hands; he never has to descend either to take in or let out his fare; and he can see on all sides much more conveniently than the man driving from the side. In Adams' patent, the driver's seat was behind; but the passengers had to enter behind; this was a great inconvenience, and it soon got out of use. In consequence of the entrance behind, it was necessary to have a differently formed axle to the plaintiffs', and he could not use the spring-frame. There is great convenience as to the construction, and very considerable skill in the mechanical arrangement of the frame and platform in the plaintiffs' cab. Heretofore, when such a body as this was used, it formed part of the framing of the axle of the wheels, and was not supported on springs; it was firmly fixed to the axle and shafts; so that when

Gillett et al. v.

any blow was given to the wheel,—any blow that took place by the wheel sinking or rising suddenly against an obstacle, the passenger would receive the shock through the spring, and the effect of the blow would operate upon the horse in various ways, sometimes on the belly-band, sometimes on the back, and sometimes sideways. By the plaintiffs' arrangement, these inconveniences are completely overcome. The arrangement of the passenger's seat below all the springs, I consider very important. The passenger sits below the point of suspension of the springs, by which the greatest possible ease is obtained. I have examined the shutters, and they are a very good contrivance. I have likewise examined the odometer, the object of which is, that masters who send out cabs may ascertain the exact distance their drivers have travelled over; it also enables the passengers to judge how far they have gone from the point of starting, consequently, they cannot be charged more than the legal fare. The instrument itself is not new, but the mode of attaching it to a carriage-body on springs is new.

Cross-examined by *Mr. Ball.*—I do not know why the odometer is not used; probably it is that the master letting the cabs out at so much per day, has nothing to do with passengers. The seat behind is substantially the same as the seat behind a mail-coach.

Re-examined by *Mr. Hill.*—The mail is a four-wheeled carriage; the guard, and not the driver, sits in the seat behind.

George Cottam, sworn:—Examined by *Mr. Shee.*—I am an engineer. I have had considerable practice in mechanical inventions. Until the plaintiffs' patent was granted, I never saw a cab opening in front, with the driver's seat behind. I consider that having the driver's seat behind, and the entrance in front, a great advantage; the advantage is this: the cab is in a state of equilibrium, the passenger getting into it does not destroy that equilibrium, because he only throws, in the first step into the cab, a little weight on the horse's back, and a small weight is always an advantage; the moment he gets into his seat, he puts it again into a state of equilibrium; he is perfectly safe, because, before he gets in, he stands free from the wheel, the moment his foot is on it, that platform being on springs, he is not liable, in case of the horse moving, to be jerked off. The driver at the same

Wilby

time, is always in a situation to attend to his horse; that is an advantage in favour of getting in in front. The next advantage is in the driving-seat being in a line with the centre of the wheel. I consider the German shutter quite new; I think it not only very convenient, but a very ingenious piece of machinery, from its simplicity. The application of the odometer is also new; I have made many odometers, and been applied to, to make odometers to attach to carriages; I never could attach one, I was not ingenious enough. I think it a very beautiful piece of contrivance. I have no hesitation in saying, that the principle of construction of the defendant's cab is precisely the same as that claimed in the patent of the plaintiffs.

John Tilbury, sworn:—Examined by *Mr. Hill.*—I am a carriage maker. I have seen the plaintiffs' cab, and also a model of the defendant's; the principle in both is the same. I consider the patent cab new, and a great improvement on all the public cabs I have seen. (Several other witnesses connected with the carriage business were called, but as their statements were in no way materially different from Mr. Tilbury's, it is considered unnecessary to publish their evidence.)

Hugh Mallett was called to prove that the defendant was the owner of the cab 495.

Mr. Hill.—This is my case, my Lord.

Mr. Ball.—May it please your Lordship: Gentlemen of the Jury, it now becomes my duty to address you on behalf of the defendant. I presume if I were to apply to his Lordship, to ask whether there is any evidence before you with respect to Wilby being the party possessed of this cab, his Lordship would probably answer me by saying, that there is some evidence, but exceedingly slight. Now, Gentlemen, I consider there is no evidence on which you can rely that this was Wilby's cab. Now, what is the evidence before you;—the first witness called was Mr. Haynes. He said that on the 5th of October,—on the 4th of October, 1838, he went to Seymour-yard, and there he saw a cab with the name of John Wilby upon it; my friend asked particularly whether he knew the defendant, John Wilby, and he said, No, I never saw Mr. Wilby. That was his answer, and upon that testimony it is quite clear that I should have been entitled to a nonsuit; but my Learned Friend feel-

Gillett et al v.

ing the press of the case on that point, put into the box that last witness, Hugh Mallett,—you must have observed, that the testimony of that witness was handed to my Learned Friend, *Mr. Shee*, across the table, and that it was not in his brief; that must have been observed by every person in Court,—Hugh Mallett is called for the purpose of propping up the case against Wilby. I say that there is not any evidence against Wilby, and it is impossible upon the evidence of Mallett, that you can say that Wilby is guilty of the infringement of this patent. What is the evidence of Mallett—Mallett says this,—At some time I went to a person of the name of John Wilby, and told him that some persons were coming to look at his cab,—was the cab there? No!—Did you see any name on the cab at any time? I did not,—Upon this point you must have the most satisfactory testimony, and it is for the plaintiffs to make out their case in the most satisfactory manner. Why have they not called for the Stamp-office papers,—why have they not called for the books at the Stamp-office, to show number 495 was a cab belonging to Wilby. Gentlemen, I cannot call the person from the Stamp-office,—it was not until to-day that it came before me, that 495 was the number they fixed on, but it was easy for them to do it, and if upon the examination at the Stamp-office, they found it was not Wilby's cab, then it is quite clear that you cannot find a verdict of guilty against this defendant. Gentlemen, remember that this action is brought, as my Learned Friend, *Mr. Hill*, has told you, for using a cab; if they had shown that Wilby was the driver, that indeed would have been some evidence; but they have not shown who was the driver, they have not shown that Wilby was the proprietor in the way they ought to have shown, and therefore I submit to you, and submit it with the greatest confidence, that before I go into the other part of the case, you will agree with me, that on this part I am entitled to your verdict. Gentlemen, I presume from your silence you are anxious the case should proceed; I will, therefore, go on at once, with respect to the question of the patent. Now, Gentlemen, I believe that this is the first time that any attempt has ever been made in a Court of justice, to set up or support a patent of this description. This is a most important case in relation to patents, because if you, by your verdict to-day, shall support this patent, then indeed

Wilby.

we shall have patent omnibuses, patent safety-vans, patent carriages of all descriptions. It is not within my knowledge that ever any case was brought into a Court of justice with respect to a patent carriage;—never. Now, Gentlemen, I contend before you, and I do so with great confidence, that a patent of this kind ought not to be supported, because upon the words of the Act of Parliament it would be generally inconvenient. Gentlemen, have you ever heard of the infringement of a patent omnibus, coach, a chariot, or carriage of any description, ever being brought into a Court of justice. Therefore I submit to you with very great confidence, that this patent ought not to be supported in a Court of law. Gentlemen, what is the charge made by my friend?—and we had better see that by the note I have taken of my friend's speech, for that gentleman was almost as ingenious as the patent itself, for we must look to the terms of the charge made against Mr. Wilby: first, they say, "that he did on the 7th of May, in the year of our Lord 1838, and divers other days between that day and the commencement of this suit, unlawfully and unjustly, without the leave or license or agreement, and against the will, of the plaintiffs, or either of them, did use and put in practice of the said description of vehicles called cabs, with certain improvements therein, which were then intended to imitate and resemble, and did imitate and resemble the said improvements."

Gentlemen, let us see what the improvements are. They do not set out in the declaration, they do not set out in the patent, what they are, and therefore, we are obliged to look at the patent and the specification. Well, let us see what they are. These are the words: "And we do claim, first, the application of a driving-seat, or box, (or such-like convenient support for the driver,) to the back of such description of two-wheeled one-horse vehicles, as are so constructed that the passengers enter in front, and suitable for cabs, as above described. Secondly, we claim a mode of applying and working of a window, or blind, to cabs from the outside, as above described. Thirdly, the applying a safety-frame and platform, (by which the passengers enter in front,) on springs, when the driver's seat is placed either at the back or on the top, and in front, as above described; but

Gillett et al. v.

we do not claim the application of such safety-frame and platform, when not placed, together with the body of the vehicle, on springs; neither do we claim the application of the platform by which the passengers enter in front, when on springs, when driven from the seat at the side, as has been done in a cab before. Fourthly, the mode of applying the side and back springs of cabs, whereby the passenger's seat is below the position of the springs, as above described. Fifthly, the mode of communicating the motion of the wheel of a cab, to a suitable train of wheel-work, for measuring the distance gone, as above described." Now, Gentlemen, these are the claims contained in the specification; there are five of them, and I should like to know upon them, what charge they make against the defendant here. They say that he has imitated and resembled the said improvements; not any particular part of the said improvements, but the improvements altogether.

Mr. Justice Coltman.—The allegation is, that he has imitated some of them.

Mr. Hill.—Yes; that he imitated and resembled the said improvements.

Mr. Justice Coltman.—It is divisible, the allegation as supported,—so much is proved as is requisite to maintain the action.

Mr. Ball.—The charge made against us, is, that it resembles the said improvements; your Lordship will be good enough to take a note of it, that I made the point. With respect to the resembling the said improvements, the imitation is with respect to the seat behind, and to the frame; or else, with respect to its being an infringement, there is no charge of the kind; the charge is with respect to the seat behind, and the frame. Now, Gentlemen, the declaration then proceeds with the other charges,—what is our plea? we have pleaded this was not a new invention, and my friend says it is not a new invention; he says in the most ingenious way that ever I heard put to a Jury, he says, this is not a new invention, but it is a new combination. If it is new in its combination, I should have imagined that the entire combination should have imitated the patent; he says the driving-box is not new, that the other things are not new, and unless every part be new, my Lord will tell you upon these pleadings,

Wilby.

this patent cannot be supported. I say, unless the combination, unless every part be new, it is impossible that this patent can be supported; in order to support it, every part must be new. Now, Gentlemen, let us go to the other point. They say this is a new invention, and they say it was a new invention on the 21st of December, 1836. Was it not proved to you by the cross-examination of the plaintiffs' own witness, namely, the gentleman in the mechanical department, that the cab was in use in the streets of London before the 21st of December, 1836. If a cab of that kind was in use in September, 1836, seen by all persons, or might have been seen by all persons, in the city of London, what right have they to say that any person had not a perfect right at that time, or any time before his patent came out, to imitate the cabriolets which had been seen in the previous September. Gentlemen, just see what a miserable action this is. They bring an action against a man for having exhibited a cabriolet on the 4th and 5th of October, 1838, brought out, as they say, upon the instigation of the Safety Company themselves, because they apply to have the cabriolets taken out; there was then an objection made, but afterwards the cab was taken out.

Mr. Hill.—You must not represent the evidence that way.

Mr. Ball.—I am speaking advisedly when I say so. Haynes was called as a witness on the part of the plaintiffs, and Haynes certainly said that he went to the yard and saw the cab, that he wished to hire it, and it was refused him because the plate was not down. It was upon the instigation of the Patent Safety Company, who are, in fact, the plaintiffs in this case; I say, it was upon their instigation that the cabriolet in question was used on the 4th and 5th of October last.

Mr. Justice Coltman.—Not upon the evidence; there is evidence that he hired it only.

Mr. Ball.—Yes, my Lord; but let us see the manner in which it was hired. What do they do with it? I say there is no evidence of this being Mr. Wilby's cabriolet, for just see what was done. A man goes and follows a cabriolet to Hyde Park Corner; he there gets into it, and then drives to the Patent Safety Company's Offices, and it is permitted there for the length and breadth of the

Gillett et al.

cabriolet to be taken, and that, Gentlemen, was the only time that the cabriolet was ever used; for it was never used but upon that occasion. Gentlemen, why have not they brought actions against twenty other cabriolets; for you find no less than twenty different sorts of cabriolets with seats behind have been and are now used; and yet there is this single action brought against this poor man, Mr. Wilby, for the use of the cabriolet, as they say, on the 4th and 5th of October, 1838; and there is not one of the gentlemen who have been called can say the cabriolet was ever seen after that period.

Mr. Hill.—Haynes says to the contrary.

Mr. Ball.—Gentlemen, upon the whole of the case I think you will have no doubt that the defendant is entitled to a verdict; first, the evidence is not satisfactory with respect to Wilby being the person who is the proprietor of the cabriolet. They have not given you the most satisfactory evidence of the point,—they have not called the officer from the Stamp-office to prove it, who could have proved in a moment, if such were the fact. I presume they went to the Stamp-office, and found he was not the proprietor, and they attempt to establish their case by such evidence as you have heard. Gentlemen, upon the second point I contend, that this is a patent which ought not to be supported in a Court of law, inasmuch as there was a cabriolet of this description taken out into the streets of London for hire, without any patent, and next that there was a patent in the name of Hansom, there being only ten of that description; and I say upon the whole of the case that I am entitled to your verdict, and I am quite sure with respect to Mr. Wilby, you will find that he was not the proprietor of the cabriolet.

Mr. Justice Coltman.—Gentlemen of the Jury, this is an action brought by the plaintiffs, against the defendant, Mr. Wilby, for infringing their patent rights. Gentlemen, the defendant has pleaded several pleas in answer to that allegation. The first plea is, that he is not guilty of the infringement, that is to say, he did not use a cabriolet made on the principle of the plaintiffs', which was an infringement of the patent right of the party; and that involves two questions: first, whether what is produced before you was used by Mr. Wilby, and, second, whether it is an infringement of the rights of the patentees?

Wilby.

He secondly alleges, that the invention was not new. And, thirdly, that the plaintiffs are not the first and true inventors.

As regards the first point, the plaintiffs put in the patent and specification which have been read to you, and which it is as well to advert to, to see what they claim as their invention. They claim,—"first, the application of a driving seat or box (or such-like convenient support for the driver), to the back of such description of two-wheeled one-horse vehicles, as are so constructed that the passengers enter in front." They do not claim, as their invention, that they merely put the driver behind, but they put him behind, whilst, at the same time, there is accommodation and convenience for the passenger to enter the cabriolet in front and not behind. The second mode, which they claim as new, is the mode of applying the German-shutter or blind to the outside. Now, the third mode they claim as being new, is, "the applying a safety frame and platform, (by which the passengers enter in front) on springs, when the driver's seat is placed either at the back or on the top and in front, as above described;" that is to say, the applying of a sort of frame or platform, by which the passengers enter in front and not behind,—that they claim also as being new in its combination. Then, Gentlemen, they proceed to explain what they do not claim. "We do not claim the application of such safety frame and platform when not placed, together with the body of the vehicle, on springs;" therefore, they say, as far as a carriage of that description is used, the only novelty they claim, is, that the frame is on springs; and then they say, "neither do we claim the application of the platform by which the passengers enter in front, when driven from the seat at the side." Therefore, in their explanation, they exclude two other descriptions of carriages, which they do not claim as part of their patent, as a novelty, except applying the frame upon springs. "The mode of applying the side and back springs of cabs, whereby the passengers' seat is below the position of the springs, as above described;" that is the next part, and that is the fourth point that they claim; that, they say, has never been done before. And fifthly, "the mode of communicating the motion of the wheel of a cab to a suitable train of wheel-work for measuring the distance gone." Now these are what they claim as being new; and it is un-

Gillett et al. v.

doubtedly true, as the Counsel has just told you, that each of these matters which they claim as new, must be made out to your mind to be new, and, if so, the defendant is not entitled to use them at all; and if you should be of opinion that they are new, and some of them not new, it is no defence if he takes any part of it, for he is liable; because if the patent is new, the party is entitled to the benefit of all and every part of it; therefore, if the defendant has taken any part of that which the patentees have a title to, the action would lie; but you must be of opinion that each of the five articles they claim are new. Now, Gentlemen, as to the last point, whether in point of fact the defendant has made use of the cabriolet in question; that depends upon the testimony of two witnesses, namely, Henry Haynes and Hugh Mallett.

Mr. Haynes's evidence is, that he went to Seymour-yard, Portman-street, Bryanston-square, about the 4th of October last; that he saw a cabriolet come out of the yard, which is the same as the model before you. He says "it had no platform; I watched it to New-street-mews, Dorset-street. I saw it leave the Mews about 7 o'clock, and it went back to Seymour Yard." He says, "I went the next morning there. I saw the cabriolet come out. Wilby, that is the defendant, has a stable and coach-houses in Seymour-yard, and I followed it to Hyde-park-corner," and he there got into the cab; and then he gives us a detail of what passed in the course of the day. Now that is the evidence as far as he goes, namely, that this cabriolet came out of Seymour-yard, in which yard the defendant has a stable and coach-house, and that the name of Wilby was on the cabriolet in question.

Mr. Ball.—Your Lordship will remember also he said that he did not know the defendant, Wilby.

Mr. Justice Coltman.—Yes, he did not state that he knew who he was.

Then Hugh Mallett also speaks to these particulars, and his evidence is material upon this point of the case, because he is acquainted with Wilby; and he informs us that Wilby had the premises spoken of by last witness. He says, "I live in Well-street-yard, Seymour-place; the defendant has premises in Seymour-yard;" he says he used to keep a cabriolet, and the model seems like it. Then he says, "The model which seems to have been taken from the cabriolet hired on the 5th of October, is

Wilby

very like Wilby's cabriolet." Then he says, "I told Wilby one day I heard them say in York-mews, that they were going to watch him out on that day, and I advised him to keep it in, and he told me he should not keep it in for any one." He appears to have been a person keeping several men at work, and occasionally working for the Patent Safety Company. Gentlemen, that is the whole of the evidence applicable to this point of the case; and you must be satisfied whether this cabriolet was used by Mr. Wilby, or by his authority. It is not necessary for the determining of that question, that he should have driven it himself; if he lets it out it comes to the same thing,—if he gets the profits of it. Then it is necessary to identify the model before you as being a representation of the cabriolet that came out of this yard on the morning in question, and for that purpose Haynes tells you that on the 4th of October he endeavoured to hire it, but could not succeed, but on the 5th he did, and took it first to Hyde-park-corner, afterwards to Mr. Duncan, the solicitor in the cause, and from thence it is traced to the office of the Patent Safety Company; it is taken by him to the place where the Patent Office is held, and there a drawing was taken of it, and twice copied, and from that drawing the model before you is taken, as being the model of the defendant's cabriolet, and that cabriolet he states to be correctly agreeing with the drawing taken. Now there is nothing else in his evidence that is very material. However in the course of cross-examination, he was asked, whether there were not cabriolets driving about town, marked "Hansom's Patent Safety" cabriolets, with a seat behind, and that appears to be true that there are, and in truth it appears that they had a number of cabriolets prepared to be launched according to Hansom's Patent Safety cabriolets, and they did not think it necessary, when they adapted it to a new machinery, to strike out the name of Hansom's Patent Cabs. He also proves, which is relied upon here by the Gentleman who appears for the defendant, there was another cabriolet which was sent out in the year 1836. That is proved by Haynes, I think.

Mr. Ball.—No, it is Dolby's evidence.

Mr. Justice Coltman.—Yes. Before the time when the patent issued,—in December, 1836, upon one occasion what he calls an experimental cabriolet, not then in a fit

Gillett et al. v

state to go out; but they were experimentalizing, and probably for the purpose of some invention of this nature; that is, before the time when the patent was taken out, it was sent out for about twenty minutes. Gentlemen, it is quite trifling to suppose that that can at all diminish the claim of the party who had sent out the cabriolet when the invention was completed, that that should be supposed not to be new, because he had made an experiment of this sort; for the invention could not be perfected without experiments, and that does not at all detract from the claim of the plaintiffs; and in truth the principal point for your consideration is the evidence of the different engineers, who have been called to satisfy your minds that this cabriolet, sent out by the defendant, is an infringement of the original invention of the patent cabriolets, and that it is a new and useful invention. Now upon that subject Mr. Carpmael states,—he is a civil engineer, and engaged in patents, and has compared the two models: he never had heard of the plaintiffs' invention before the patent. These two models, he says, are made very well indeed. The defendant's model is on the principle of the patent. Then the model was handed up to him, and he explained how the thing stood. He says there is a great advantage in putting the driver's seat behind, as compared with others which have existed, and which were, in fact, the cabriolets used formerly; he says there is an advantage in putting the driver on the seat behind, instead of the side or the front. In the one case with the seat at the side, the driver was obliged to leave his horse to go down to assist the passenger out, and the horse has very often started off. With regard to the seat in front, the driver was in a very dangerous situation, and it was highly disagreeable to passengers, because of the dirt splashing in their face. Gentlemen, what you have to try is, whether the invention is new upon this part of the case. This witness says, in Adam's patent there is a seat behind, but at the same time the passenger gets in behind. It is with a view apparently to this circumstance they claim the application of the driving seat or box, so constructed that the passenger enters in front, because if they had claimed it generally with respect to the driving seat behind, Adam's patent had that before, and that would not have been new; but the novelty, as witness alleges, is having the driving seat behind, and the *fare* gets in in

Wilby

front. He says, if the passenger gets in behind, you cannot apply the spring frame so conveniently as upon this plan. He says, heretofore, when such a frame was used, it formed part of the framing of the axle, so that it all formed one solid frame. That is with a view to the third point that is mentioned, namely, "the applying a safety frame and platform (by which the passengers enter in front), upon springs, where the driver's seat is placed either at the back or on the top, and in front, as above described." It is not new having a safety frame like this, but the novelty is, and which is claimed by the patent, that instead of forming one solid work, it is placed upon springs, and the consequence, he says, is, there would be a direct jar to the horse. He says, the making of safety-springs, in conjunction with the seat behind, is the essence of that part of the invention; therefore they were obliged to limit the invention, so as not to claim that invention which had formerly existed, of having the safety frame on springs, when the seat was by the side of the driver. That was done before, and if they had claimed it, it would not be new, and therefore they limit the claim as to the novelty, by applying it to springs, when the driver's seat is either at the top or behind. He says, the seat of the passenger is below the point of suspension, by which greater ease is attained; passengers can get in and out without the driver descending; and the door opens conveniently at the back, so that it protects the passengers getting in. He says, the mode by which the shutter is applied is a new and useful contrivance; so is the odometer useful; it shows how far the cab has gone. He says, the odometer is not new, but only the mode of applying it to a carriage body on springs is new; therefore, it would not have done to have claimed that as new, therefore what is claimed is, 'the mode of communicating the motion of the wheel of the cabriolet to a suitable train of wheel-work for measuring the distance gone, as above described.' He says, I have compared Wilby's cabriolet with the patent cab; he says it is an infringement; the only difference is the absence of the odometer and the blind; but the safety frame is wholly on the principle of the cabriolet, but is not so efficient as in the patent cabriolet. In point of fact, the point of infringement according to their witness's statement, is the application of the driving seat or box to the back of the cab, and the safety frame. It appears to

Gillett et al. v.

be the case in both carriages, that the seat is behind, and the passenger can enter them in front. Secondly, they apply the safety frame upon springs, when the driver's seat is placed either before or behind. The third point of infringement is, "the mode of applying the side and back springs of cabs, whereby the passenger's seat is below the position of the springs, as above described." Now he says, the only substantial difference is the absence of the odometer and the blind: the frame is not so good, forward it is the same, but backwards, it does not extend so far back; he says, the seat behind is the same sort of seat that you see for the guard of a mail coach; that is not a driver's seat, and it requires considerable mechanical skill to construct such a cabriolet as has been done in this case. Then Mr. Cottam is called, and his evidence in substance is the same; and I am not aware that reading it will assist you much. Gentlemen, there have been also called before you three coachmakers; namely, Mr. Tilbury, Mr. Haughton, and Mr. Rackham, who all agree they have seen no cabriolet like this, with the exception of Hansom's Patent Safety cabriolet, which they consider has a resemblance to this cabriolet; but the engineers say it differs in some particulars, namely, it is not upon springs; and it was also different in this respect, that the point of suspension was more above the line of attraction. Now, Gentlemen, you will perhaps like to have the points you will have to determine before you. If you wish to look at them, there are five different points which the parties claim as being new; and if you are of opinion that they have established that they are new, then that part of the case is made out, and the verdict ought to be for the plaintiffs. Gentlemen, as to the plea that they were not the first inventors, there is no evidence produced before you to show they were not, and they have got the patent; and the remaining point for your consideration is, whether you are satisfied that Mr. Wilby used a cabriolet of this description, which is alleged to be an infringement of the patent of the plaintiffs. If he infringed any part of that which the party claims as new, that is an infringement, though he does not take the whole of it. Gentlemen, you will now consider your verdict.

Mr. M. D. Hill applied for a certificate under the 5 and 6 W. IV. c. 83, s. 3, that the validity of the patent came in question.

Wilby

Galloway et al. v. Bleaden

Mr. Justice Coltman.—I think you are entitled to the certificate.

Mr. Ball objected that under the pleadings he was not allowed to question the validity of the patent.

Mr. Justice Coltman.—I think the validity of the patent has in part come in question under the plea that the invention was not new, and that the plaintiffs are not the first and true inventors. But I will look into it.

The certificate was afterwards granted.

The Jury having consulted for a few moments, returned a verdict for the plaintiffs.

GALLOWAY AND ANOTHER *v.* BLEADEN.

In the Court of Common Pleas, before the Lord Chief Justice (Sir N. Tindal), and a Special Jury.—Nov. 29, 1839.

This was an action brought by the plaintiffs against the defendant, who was the registered officer, or secretary to a Steam-boat Company, for the infringement of a patent* granted to one of the plaintiffs, Elijah Galloway, on the

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—Now know ye, that in compliance with the said proviso, I, the said Elijah Galloway, do hereby declare the nature of my said invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following description thereof, reference being had to the drawings hereunto annexed, and to the figures and letters marked thereon, (that is to say):—

"My invention relates to the methods of affixing the floats or paddles of paddle-wheels, whereby I am enabled more advantageously to apply the power of the engines, and at the same time in a great measure prevent concussions from the floats or paddles in entering and avoiding lifting so much water on leaving it, by which means the swell heretofore so prejudicial is in a great degree avoided. But, in order that my invention may be most fully described and readily applied to the varied circumstances of different vessels, I will first explain the diagram, fig. 1; having, however, first stated that in constructing wheels to new vessels, it will be necessary to make the calculations precisely in the same way as if ordinary fixed radial floats or paddles were to be used, in order to ascertain the quantity of surface for the floats or paddles, with reference to the number of strokes of the engines, its power, and the desired velocity to be obtained to the vessel; but in place of having the whole depth of the float of one unbroken area, the floats as used by me, are in divided portions, and it is the method of arranging such divided floats, according to the principle hereafter described, which constitutes the invention secured by the present letters patent.

"Fig. 1, represents a diagram of two circles, *a, a*, and *b, b*. The circle, *a, a*, being the circle or course of the outer edges of the floats, and the

Galloway et al.

18th day of August, 1835. The declaration stated the grant of the letters patent, and the assignment of one

circle, *b*, *b*, that of the inner edges of the floats. *d*, *e*, is a radial line which, according to the most general method of affixing floats, would represent one of the floats of a paddle-wheel. Now, when a paddle-wheel is propelling a vessel at any given velocity, an imaginary circle may be drawn (say *b*, *b*,) the circumference of which multiplied by the number of revolutions in a given time will exactly coincide, in measurement, with the distance through which the vessel has moved in the same given time, and I prefer that such line should coincide with the circle which the inner edges of the floats traverse. This circle, *b*, *b*, may, therefore, when the vessel is in motion, be conceived to roll along the imaginary horizontal line, *c*, *c*. Such being the case any point in the whole area contained within the circle, *a*, *a*, will describe in its passage through space a cycloidal curve, but the curve described by the point, *d*, will be a true cycloid, and conceiving the line, *c*, *c*, to be the water line at which the vessel floats, and the point, *d*, to be at first in contact with the point, *f*, and then the circle or disc, *b*, *b*, to be rolled along *c*, *c*, till it reaches its present position, the segment of a cycloid, *d*, *f*, would thereby be generated. Now, if a bar or curved plate were affixed to the circles, *a*, *b*, of the form of the curve, *d*, *f*, such body or curved plate would, in causing the wheel, *a*, *a*, and *b*, *b*, to revolve in the direction of the arrow, enter the water, and be completely immersed, every part passing through the point, *f*, on the line, *c*, or surface of the water.

"Having thus explained the principle of generating the curve, *d*, *f*, I will now proceed to describe the manner of affixing the float-boards according to my invention.

"Fig. 2, represents a side elevation, and fig. 3, a perspective view of a paddle-wheel, having my invention applied thereto; *g*, *g*, *g*, *g*, *g*, *g*, *g*, are a series of portions of floats which radiate from the common centre of the paddle-wheel. These portions of floats are set on a curved line approximating to the line, *d*, *f*, fig. 1; but the drawing, figs. 1 and 2, having been made from a paddle-wheel actually constructed, is not exactly of the same curvature as *d*, *f*, but will sufficiently explain the principle of this invention, by assuming the bars, as in fig. 1, to be arranged on the curve, *d*, *f*, and the bars constituting a float-board to touch the curve, *d*, *f*, at their outer edges as shown at, *g*, *g*, *g*, *g*, *g*, *g*, fig. 1; these portions of float-boards are securely affixed to the paddle-wheel by screw bolts and nuts, or by other well-known means. Now, it will be obvious that if the paddle-wheel be supposed to be revolving in the direction of the arrow, fig. 2, and the vessel going at such speed as that her velocity is equal to the inner circle, *b*, *b*, then the bars constituting one paddle, would enter the water at the point, *f*, or nearly so, and displace a very little more water than that disturbed by the lowest bar. Thus the waste of power attendant on the entrance of a common radial float-board is obviated, and the concussion produced thereby almost entirely avoided. When the paddle arrives at the point of deepest immersion, the resistance reaches its maximum, thence gradually diminishing until it quits the water at *j*, and the water falls more easily through the open spaces between the bars than from the common paddle.

"I wish it to be understood, that, although only the true cycloidal curve, generated as I have shown in fig. 1, is best adapted to cause the

Bleaden.

half-share to *Routledge*, and assigned as breaches, that the Company made paddle-wheels for propelling vessels,

series of bars forming a paddle to enter the water in the way I have described, yet there is a limit beyond which the true cycloidal curve ceases to be the most efficient arrangement; this is when the retrograde motion of the paddle through the water is much greater than I have assumed in fig. 1. For it is obvious that if the circle coinciding with the vessel's velocity were only half the diameter of *a*, *a*, fig. 1, then a cycloidal curve generated under such circumstances, passing through, *d*, would reach at its outer extremity to the point, *l*, (fig. 1). In that case, if the bars, *g*, *g*, *g*, *g*, *g*, *g*, were arranged upon such curve, they would be considerably wider apart than is shown in figs. 2 and 3, and I have ascertained that it is essential, in order to obtain the maximum of propelling resistance in paddles of this description, that the space between any two of the bars, *g*, *g*, *g*, *g*, *g*, *g*, should not be too great, and thereby lose the property of acting in combination or conjunction, thereby entailing a loss of propelling resistance. And I would therefore have it understood, that when the cycloidal curve is of such a form as that a straight line drawn from the bisecting point in the arm as *d*, to the bisecting point in the rim as *f*, forms a very considerable angle to the radius, *d*, *e*, (say *d*, *l*,) then I do not confine myself to the cycloidal curve, but place the bars in such positions that they will be nearer to each other than if placed in the direction from *d* to *l*.

"I do not, therefore, confine myself to the necessity of the cycloidal curve, *d*, *f* (though such curve under the precise circumstances therein set forth is the most efficient arrangement of the bars), for I am aware that if the bars, *g*, *g*, *g*, *g*, *g*, *g*, were placed upon a curve or line (forming even a straight line) at a less angle than *d*, *f*, to *d*, *e*, they would have a superior effect to the common paddle; or, supposing the cycloidal curve to extend from *d* to *l*, then if *g*, *g*, *g*, *g*, *g*, *g*, were placed upon any line which formed a less angle to *d*, *e*, than *d*, *l*, such an arrangement would be within the limits of my claim. It should be remarked that since the sealing of my said letters patent, I have been informed that Joshua Field, Esquire, Engineer, of Lambeth, some years before the date of my said patent, made an experiment of a paddle-wheel on a small vessel belonging to him or his partners, called the "Endeavour," the floats of which were divided into portions, but they are not fixed according to the principle, the application of which constitutes the object of my invention, and which experiment, I have been informed, and from the nature of the construction of the wheel, I verily believe, was declared by him to be a failure; and I have only thus noticed this experiment in order to state, that I do not claim the exclusive use of divided floats or paddles, unless they be applied and affixed to paddle-wheels according to the principle herein described; and in order to point out more accurately the difference of a wheel constructed according to my invention, and that experimented on by the said Joshua Field, I have annexed a drawing of a portion of the said wheel so used in the "Endeavour," sufficient to show the principle thereof, but on inspecting the same drawing, fig. 4, it will be evident that the portions of the floats are not affixed according to the method described and claimed by me.

"I would in conclusion, wish it to be understood, that I lay no claim to the various parts of paddle-wheels herein described, and generally

Galloway et al. v.

according to the said invention, in imitation of the said invention, to which the defendant pleaded—

First, not guilty;

Second, that Galloway was not the first and true inventor;

Third, that the invention was not particularly described,

Fourth, that the said invention was not any manner of new manufacture within the realm, but had been, and was, in public use at the date of the granting such letters patent; with these pleas, the defendant filed the following objections:—That Galloway was not the first and true inventor; that the alleged improvements had been, and were, invented by Messrs. Maudslay and Field, or one of them; that this use of divided float-boards, on the principle of the said alleged invention, had been invented and used by the said Messrs. Maudslay and Field before the date of the said letters patent; that the said alleged invention was not the invention of any manner of new manufacture within this realm, but the discovery of a principle, and that the said letters patent tended to prevent that principle being investigated and usefully applied by others; that the specification did not describe and ascertain the nature of the said invention, and was obscure and uncertain, and did not give or suggest any means of determining the supposed point called *l;* nor did the specification state or show at what angle it was that the said patentee places the bars or floats, in such positions that they will be nearer to each other than the said position, *d* to *l*, nor did the specification show at what angle or line, whether curved or straight, the float-boards were to be placed, nor did it show when the space between them would be too great; that the principle of the patent, and the application of the principle had been discovered and made by Messrs. Maudslay and Field, or one of them, before the date of the said letters patent; that the specification was too large and extensive, and the claims too extensive, inasmuch, as it included a certain invention of a similar kind, made, used, and put in practice previously to the date and grant

well known, when the same are not combined according to the method of affixing the portions of floats as herein explained. And, I do declare, that my invention consists in affixing the portions of floats or paddles, *g, g, g, g,* according to the arrangements herein described.—In witness whereof, &c.

"Elijah Galloway."

Bleader.

of the said letters patent, by the said Messrs. Maudslay and Field.

Mr. Attorney-General (Campbell), *Mr. V. Richards*, and *Mr. M. Smith* appeared for the plaintiffs.

Mr. M. D. Hill, and *Mr. R. Alexander* for the defendant.

Mr. Attorney-General addressed the Court as follows: —May it please your Lordship: Gentlemen of the Jury, I have the honour to represent before you one of the most ingenious and meritorious members of society, I mean Mr. Elijah Galloway; it is on account of his unwearied assiduity, that steam navigation has reached the pitch of perfection which we now witness. Gentlemen, you are of course aware that great inconvenience has been felt from the common paddle-wheels; and must have been a good deal annoyed by the vibration that you feel on board. What is the cause of that? It is, Gentlemen, by the sudden immersion in the water of the paddle; the paddle being a continuation of the radius from the axis, this large body being at once immersed in the water there is a great shock, there is a great concussion, and a great loss of power. When it becomes vertical it will do its duty, but as soon as it is leaving the water it produces the greatest inconvenience from the back water it lifts up; it thereby causes a very great resistance, and retards the progress of the vessel. Gentlemen, there have been various contrivances resorted to, for the purpose of overcoming these inconveniences, and Mr. Galloway invented a wheel which is now called Morgan's wheel (Mr. Morgan being the licensee of the patent), which has been the subject of a trial at law, and the merits of which are universally acknowledged.[*] Now the principle of that wheel is different entirely from the one you are going to sit in judgment on; it imitated the feathering of an oar; the paddle was still of one piece, which was made to enter the water at the favourable angle, then to become vertical when it was at the lowest point of immersion; and then it was so contrived, that, on leaving the water, it should assume another angle, and merely move out of the water, without the resistance which had been experienced from the radial wheel. Gentlemen, this was found most successful, and the only objection was the fear that it might get out of order, and the difficulty there would be of repairing it when the vessel

---

[*] *Morgan* v. *Seaward*, *ante*, p. 1.

Galloway et al. v.

was at sea; it has been adopted by the steam-vessels of the Royal Navy, and has been extremely successful. Now, Gentlemen, to obviate this inconvenience, Mr. Galloway pursued his researches and followed up his discoveries, and the great object which he now had in view was to have a wheel which should be simple and solid, with only one motion from the axis of the wheel. In the present invention the float-boards or paddles are each divided into sections; there had, however, been attempts made by several others to separate the paddle into sections, and to make it enter the water at different points; but these, Gentlemen, had utterly failed because they were not so contrived as to make the different sections of the paddle enter by their edges at the same point of the water, and they were at a considerable distance from each other, so that these different sections did not operate as one float. The great problem was to have the sections of the float to come nearly to enter the water at the same point, and not distant from each other, so that they might operate as one; and then, Gentlemen, that it should revolve, and leaving the water, that it should not at all offer the resistance which is opposed by the radial paddle, consisting of one continuous mass. Gentlemen, after many experiments, and a great deal of time spent, and very considerable expense incurred, Mr. Galloway did discover the curve upon which the different sections of this paddle should be placed to gain his true object: viz., entering the water at the same place, and their not being so far distant, so that they might operate as one single float. Gentlemen, in the latter end of 1834, Mr. Galloway, had completed his experiments and wholly accomplished his object; in the latter end of that year, and in 1835, he communicated, confidentially, his discovery to several persons, and on the 18th August, 1835, he took out his patent, and the following month publicly put his invention into use. He was then a good deal surprised to hear that a gentleman of the name of Field claimed to have discovered this wheel; but Mr. Field made no such wheels at that time, nor ever made such wheels until the year 1837 or 1838. But, Gentlemen, there having been experiments made by Mr. Field,—abortive experiments made by Mr. Field, of which Galloway had notice before he enrolled his specification, he mentioned in that document those experiments, and clearly and satisfactorily distinguished

Bleaden

his invention, from that of which it was said Mr. Field was the discoverer. Gentlemen, Mr. Galloway's paddle-wheel had the most brilliant success. Whatever experiments Mr. Field had made were abortive; it was with him a total failure. But if he had made this discovery, which my client, Mr. Galloway, had made, it would have been just as successful in his hands, as it was in the hands of Mr. Galloway. Mr. Field is a gentleman most extensively employed in fitting up steam-vessels,—he had the most ample opportunity of putting his wheels upon any vessels of which he had the fitting up, but he adhered to the old-fashioned, entire, continuous, and radial paddle; and until the year 1837, he did not at all think of making them in the manner by which the floats are divided into sections, on the principle of the wheel of Mr. Galloway. Gentlemen, the success of my client's wheel, I say, was brilliant; as soon as it was shown to the public, it was seen, from its simplicity, from its solidity, and from its efficiency, to be superior to any they had before known. It was adopted by steam-packet companies; it was adopted by some of the ships in Her Majesty's service, and by many private traders proceeding to different parts of the world, and, among others, Gentlemen, it was adopted by the Commercial Steam-Packet Company, who are the defendants on this record, and are sued through their secretary, Mr. Bleaden. And I must say, that they come with a very ill grace to defend this action, and to say they are entitled to pirate the invention of Mr. Galloway, when they themselves again and again purchased from him his patent wheels, and paid him for a license to allow them to have another and another pair of wheels made upon his principle. Now, Gentlemen, I say, that having got our wheels manufactured by us, they having acknowledged to us that this was a valid patent, having had their vessels fitted up with this patent, I do think it is not quite correct for them to go to another person (who makes these wheels, perhaps a little cheaper,—he pirating our invention), and then say they will give nothing for a license, because they allege that the patent is void. Gentlemen, Messrs. Routledge and Galloway went on successfully during 1836 and 1837, and then there was a certain degree of envy at the success which they enjoyed, and others claimed to make this wheel exactly according to the specification, and said that they would set Mr. Galloway at defiance. Amongst

Galloway et al. v.

others, I am sorry to say, we must enumerate the Commercial Steam-Packet Company; this action is brought against them rather than against Mr. Field,—we might easily have brought an action against him, because it is notorious that he, upon our principle, has fitted up the Great Western, the exploits of which are celebrated all over the world, but it was thought a fairer proceeding, that this action should be brought in such a shape as to allow Mr. Field himself to be called as a witness, and, I may say, a witness in his own cause. Well, then, what is the defence? Gentlemen, it is said, I think, there are two defences: one is that Mr. Galloway was not the inventor, and that Mr. Field was the inventor of it previously; and secondly, that the specification is not sufficient. Gentlemen, it is not at all disputed that before any experiments were made, either by Mr. Galloway or Mr. Field, the notion had been entertained of dividing the float-board into sections; that had been tried, but the mode of doing it efficiently had never been discovered, because merely to divide the float-board with sections,—to make each section, as it were, a separate float-board, will retard the motion of the vessel. It is said, that in 1833, Mr. Field showed a wheel to the Lords of the Admiralty. Gentlemen, it will not be very material to consider what that wheel was, because the showing of it to the Lords of the Admiralty was no publication,—was no general practice of the invention, and would not deprive a person who subsequently made the same discovery from taking out a patent for it. But, Gentlemen, I very much believe at that time that Mr. Field knew nothing of the principles upon which Mr. Galloway's wheel is constructed. In that year Mr. Field fitted up a steamer, called the "Endeavour," by way of experiment, the paddle-wheels of which had the float-boards separated into sections, but those sections were not upon the curve described by Mr. Galloway; that the curved line upon which the sections were fixed was not a cycloid; that the different sections did not enter the water at the same place, and that they were at such a distance from each other that they did not operate as one float, and the best proof that the trial was a failure, was the fact that Mr. Field had the wheel removed, and the "Endeavour" was again navigated by the old-fashioned radial paddle-wheel, and it is this wheel of Mr. Field that Mr. Galloway disclaims in his specification.

Bleaden

Gentlemen, if the invention had been constructed on the principle of Mr. Galloway's wheel, and the experiment had been successful, Mr. Field would immediately have taken a patent, he would have secured this most valuable invention, but instead of that he drops it entirely, and from that time until the year 1837, he never fitted up a single vessel on a similar principle. Now, Gentlemen, I think that, in all these cases, Juries may adopt this as a safe test and criterion,—Who brought this discovery to perfection? Who made it efficient for the public service? Mr. Field failed, and if Mr. Galloway had not taken up the subject,—if he had not made his experiments,—if he had not prosecuted his inquiries, the wheel that is now adopted by the Great Western, the British Queen, and other steamers, would never have been brought into use. Gentlemen, the second objection in the validity of the patent, is that the specification is not sufficient to instruct a workman to make the wheel; I shall show that any workman of competent skill, by merely having the specification laid before him, and who is in the habit of making paddle-wheels, can do it without the smallest difficulty. Well, then, we have no dispute about infringement, and the only question I apprehend will be whether Mr. Field was the inventor, and publicly practised the invention before the 18th of August, 1835. Gentlemen, with this observation I will now content myself; I will call my witnesses, and I trust that this patent will be established, and that this discovery which has been so beneficial to the public, may likewise be beneficial to the ingenious gentleman who is the author of it.

William Carpmael, civil engineer, sworn, examined by *Mr. Attorney-General.*—Has known Mr. Galloway ten or twelve years, during which time he has frequently consulted me upon his inventions. He shewed me a model, and described the general principle upon which he proposed to construct the wheel which is the subject of the present trial, either the latter end of 1834 or beginning of 1835: I have been very much consulted upon the subject of paddles, I should say that almost every experiment that has been made on paddle-wheels has come before me, in some shape or other. As far as I know the principle of Mr. Galloway's invention, it was new at the time of his taking out his patent. There has always been great inconvenience experienced in using paddle-wheels

Galloway et al. v.

with the radial floats being one continuous substance; each float-board gives a blow as it enters the water, and causes great concussion and vibration, and the power that is required to force the paddles into the water is prejudicial to the engine. The object of all modern improvements has been to get rid of that loss of power, and also to get rid of the shocks. There is a loss of power on leaving the water, in proportion to the approach of the float to the horizontal position, or sharpness of the angle at which it comes out, according to the circumstances under which the ship is labouring. In my opinion Mr. Galloway's wheel is calculated to obviate these difficulties; the principle upon which this wheel is constructed is this,—supposing a wheel is passing along a level surface, a point in that wheel generates a certain curve, which is called a cycloid, and the patentee claims the affixing of the different portions of which a float-board consists upon a cycloid, with the view that they should follow in that same cycloid, and consequently follow each other, so that the outermost one of the parts of a float-board having entered the water, the next part thereof would follow in the same curve. Notwithstanding the onward motion of the wheel and the space between each of the parts, owing to the space between them being small, the quantity of water that could by possibility slip through would be very trifling, and they would substantially act as a solid float-board. With respect to the wheel of the "Endeavour," supposing it to have been upon the cycloidal curve, it would not be within the boundary line pointed out by Mr. Galloway. The former, so far as I have been able to torture and turn it about in every shape and form, appears to me to be upon no cycloidal line at all. The parts of a float-board on the wheel of the "Endeavour," would not enter the water at the same place; there would be a very considerable separation between them, and in a large wheel, for instance, if it were on the Great Western, I should think the points of entering the water of the separate parts of a float-board would be as far apart as two feet, or even more; the effect would be the reverse of Mr. Galloway's wheels, in which the edge of the first part of a float-board would break up the water, and the second part would follow into that broken water, and the third into that. There is not, nor could there be in Mr. Field's wheel, at any one time, anything like a perpendicular

Bleaden

position of all the parts of a float-board; one part must have proceeded according to the distance of one from the other, which is very considerable. A wheel upon this construction would not get rid of the shock sufficiently, and I think it would work worse than the common radial float. [The witness by large models explained the working of the plaintiff's wheels, and also Mr. Field's wheel, showing that in the plaintiff's the several parts of a float-board acted as a single one; whereas in that of Mr. Field each part worked independently, and as a float-board in itself.] The wheels of the Grand Turk and the Chieftain are constructed upon the principles of Mr. Galloway's invention. [The witness was speaking of two models of the defendant's wheels, on the vessels of the Company called the Chieftain and the Grand Turk.] The specification is so drawn that no person could fail to make wheels according to the patent.

The witness was cross-examined by *Mr. M. D. Hill*, chiefly with a view to show that there never could be an instance of a vessel having all the conditions of the specification, which assumes that the inner edge of the float-board or paddle should be the water-line, and that the distance run should be that described in space by the inner edge of the float-board or paddle, and that therefore the specification tended to mislead, and a party making wheels for vessels where this state of things could not be had would be misled. The witness showed that the Great Western wheels had all the conditions of the patent, and they were made by Mr. Field, every person making wheels according to the patent would get as near to the perfect state as the circumstances of the particular vessel would admit of, and could not fail to do so if the specification were fairly looked into. No specification could meet every variety of case, but the specification gave the invention in the most perfect state. [Much of the evidence is necessarily left out, owing to the witness speaking of various models and diagrams to illustrate the subject, which cannot be given, and would not be intelligible, unless the reader had the models and diagrams before him.]

George Cottam, Engineer, examined by *Mr. Attorney-General.*—I have examined the construction of the wheel that is the subject of Mr. Galloway's patent, which I believe was quite new at the time the patent was taken out.

Galloway et al.

It differs from the ordinary radial wheel by the floats being divided and arranged in a cycloidal curve. There are great advantages resulting from the use of such a wheel, the violent shocks that the common radial paddle subjects the vessel to, are greatly reduced. It enables a vessel to be more deeply laden, with less injury to her speed than with common radial floats. It prevents her from having so much loss from what is called tail-water; the pieces of the float-board should all be within such a space apart, that they shall act in concert with each other; all to be nearly vertical when at the greatest propelling point, that is, when vertical or a little beyond. If they are so far apart that they will not act in concert, there is no saving of power. A wheel constructed upon the principle of that used in the Endeavour would not be any improvement upon the common radial wheel. I have carefully examined Mr. Galloway's specification, upon reading which no competent workman could find the slightest difficulty in constructing the wheel. [This witness also spoke to the same models and diagrams as the previous witness.]

Cross-examined by *Mr. Hill.*—It is not necessary that the floats should be arranged on the cycloidal curve, any curve coinciding as nearly as possible with the cycloid will do; there are half a dozen curves that would do, there is the involute, the evolute of a circle, and the volute.

Joseph Gibbs sworn.—Examined by *Mr. Richards.*—I am Engineer of the Croydon railway; I have frequently been on board vessels that have used Mr. Galloway's paddles; the difference between those and boats propelled by the ordinary wheel is very great. The motion of the vessel, in its progress through the water, is much softer, in the one case there was a distinct blow of the paddle, and in the other case it was more equal and uniform. Mr. Galloway communicated this invention to me in the latter part of 1834. He showed me the model, and also a drawing and diagram of his paddle-wheel, and he gave me the reasons for adopting it, and those reasons are precisely the same as those contained in the specification of the patent.

Mr. Attorney-General.—My Lord, this is the plaintiff's case.

Mr. Hill.—May it please your Lordship, Gentlemen of

Bleaden

the Jury, it now becomes my turn to address to you some observations upon the case which has been presented to you by my Learned Friend, the Attorney-General, and also to state what, on my part, I shall find it necessary to lay before you, on the part of the defendant. My Learned Friend began by stating, that his client was a gentleman to whom steam-navigation was much indebted; he described to you the invention which is the subject of the present cause; he spoke of its brilliant success; he said, that no sooner had this invention been made known than it was adopted by steam-boat companies, by private individuals, and I thought he had said also by the Government; therefore I thought we should have had an array of witnesses, because, if he be correct, none could be wanting to show to you the wonderful success which had accrued to the proprietors of the steam-paddles made by the plaintiff. We have heard something of the Great Western,—is any one person brought forward connected with that vessel? What you heard from Mr. Carpmael, yesterday, was mere hearsay. Gentlemen, I shall show you, on the part of my client, who has, I think, been attacked very unnecessarily by my Learned Friend, that all his brilliant anticipations have been failures. Gentlemen, my client purchased two pair of paddles from the plaintiff; but as a proof that they did not succeed, I shall show you that they have been all taken away and replaced by other paddles of the most simple construction; and although my Friend's clients have had models made for the purpose of showing, they have never ventured to explain them. However, we may also have a little better fortune with the Chieftain; and I think we shall not require much mathematics to get a proper idea of its construction. [The Learned Counsel then explained the nature of the wheels represented on the models of the Grand Turk and Chieftain, which were fully described by the witnesses for the plaintiff.] Gentlemen, my clients having adopted the paddle-wheel which I have described in preference to those of the plaintiff's, were much surprised to find, that my Learned Friend had been instructed to make charges against them, when they thought that they were the injured parties. But it seems that my clients are not the persons against whom the wrath of the Attorney-General is directed; but it is Mr. Field who is trying to put an

Galloway et al. v.

end to this brilliant success, and of course Mr. Field is the object of attack. But, Gentlemen, if Mr. Field is the object of attack, I do not very well understand why the action was not brought against that gentleman. My Learned Friend says, "we could have attacked Mr. Field for fitting up the Great Western, which is upon our principle." Now, if so, is it not very extraordinary that no one person is brought here, to show to you a model of the Great Western's paddles? But there is another thing that astonishes me, and that is this, that notwithstanding the amazing success of Mr. Galloway's wheel, my Learned Friend, to exemplify this success, brings before you the wheels of the Great Western. One would have thought that my Learned Friend would have chosen some vessel actually fitted by Mr. Galloway, or under Mr. Galloway's auspices. But no; he applies to some vessel which was not made by Mr. Galloway, and which I will show you was not on Mr. Galloway's principle. Gentlemen, I shall call Mr. Field, and you will hear from him the account of the whole transaction as far as he is concerned. Gentlemen, you have heard that formerly there were no split-paddles in use—that you heard from Mr. Carpmael—but what had a motion distinct from the motion of the wheel itself. Now those were the only sort of split-paddles that had been heard of, up to the time I am about to mention, and those paddles Mr. Carpmael said were arranged on the radial principles,—they only differed from the common steam-boat paddles inasmuch as, instead of the one float, the one float was cut up into several sections, and these sections had each an independent motion, but they were on no line, either curved or straight, out of the radius of the wheel, and they were none of them fixed, but had a motion. Gentlemen, you were told by the first witness that all machinery connected with steam-paddles must be of the simplest description, it is so very liable to get out of order. That was the fault of Morgan's patent, which you will remember was upon the principle of feathering the oar. It was very important to approximate, as nearly as well could be, to this principle, where the parts should be fixed, as you have seen by models which have been shown to you. Now it occurred to Mr. Field, that it would be desirable to bend a board into a form that would be a cycloidal curve; but although this form entered the water very

Bleaden

well, it was found that, on coming out, it spooned out the water with it, and the evil of the resistance more than balanced the advantage of the ease with which it slipped into the water. Mr. Field then divided the float into sections, and placed three sections at such a distance from each other that the water would run through. Mr. Field tried his experiments in May, 1833, and submitted his plans to the Lords of the Admiralty. But my Learned Friend says, "Oh, you ought to have taken out a patent!" Gentlemen, I think such a firm as Maudsley, Son, and Field, are better employed than taking out patents. Gentlemen, in 1833, Mr. Field fitted up the Endeavour with one of his wheels and one of the old ones, and run publicly for six weeks from London to Richmond; there was no concealment nor anything like it. I shall call before you Mr. Berry, who went on board and examined the parts, and made himself acquainted with the application of this principle, long before Mr. Galloway took out his patent. Mr. Field continued his experiments, and kept a table of his improvements; and to show that the cycloid was not new, but was perfectly known by him, I have among the paddles whose results are registered, one which is entitled "wheel of nine cycloidal paddles." So much for priority. I shall show you that so far from confining this even to his own workmen, Mr. Field actually invited gentlemen from Woolwich to inspect the invention; in fact, he did everything but keep this matter a secret. Why, Gentlemen, even the number of persons to whom this was shown, was a matter of great importance, but, when you look at their quality, it becomes much more important than their number. It would be much less a publication, to take a steam-packet paddle to a large inland town, and show it there in the market-place to thousands, than it would be to show it to a dozen of the principal engineers in the metropolis, who are interested about such matters. Therefore, Gentlemen, I shall submit to his Lordship, that even if the patent were good in other respects, and even if an infringement had been proved, there was a publication of this invention previous to the time when Mr. Galloway's patent was granted. Now, Gentlemen, let me ask whether the patent has been infringed. Mr. Galloway, in his specification, says,—I do not claim the

Galloway et al.

splitting of paddles into parts, nor do I claim the paddles when they are put on as they are put on in a certain drawing which he gives, which, he says, was the drawing of the Endeavour. Now, Gentlemen, it is quite clear therefore, that the patentee knows very well that he cannot support his patent, for two of the inventions which I have mentioned, namely, splitting the fixed paddle, and putting the paddles upon the wheel, in some manner different from putting them on the radial arm of the wheel, that is quite clear. Now see the ingenuity of Mr. Galloway, who, with the assistance of Mr. Carpmael, an ingenious inventor, who is not an inventor of paddle-wheels, but an ingenious inventor of specifications, there lies Mr. Carpmael's talent: it is his profession, and a very eminent person he is in his profession; the specification in this case is his invention, and not the paddle-wheels. We will see whether Mr. Carpmael has succeeded; I am afraid in this instance, notwithstanding all his exertions, he has been attempting to make bricks without straw, and he has failed. Mr. Galloway finds that it is too absurd to claim the fixed paddles; that cannot be done. It is absurd to say that he invented the plan of departing from the radial arm, and putting the floats on some other place. But he says,—Let us get a little mathematics together; let us get a little stock of hard words, and then we will see if we cannot map out a territory and claim that territory, and that shall be the only territory in which any man of sense will vary from the radial line, and then we shall get, by hook or by crook, the cycloidal curve, that which we cannot get in a straight line. Although Mr. Galloway has actually disclaimed the Endeavour's paddles, I will show you that he does claim it. Mr. Cottam says, he claims all the territory in which it can be. If it is not in that it is nowhere; and Mr. Cottam says,—We do not confine ourselves to cycloidal curves, we may use involutes, or evolutes, or volutes; we may do anything at all till we go out of the family of curves, and come into the family of straight lines. That is, you cannot have any line curvilinear or rectilinear where the magical territory cannot operate. (The Learned Gentleman proceeded to read the specification of Galloway's patent, commenting on many of the parts as being ambiguous, and that the invention was so described

Bleaden

as would be utterly impossible for the most competent workman to make the paddles from the specification alone. The objections raised were, however, overruled by the Learned Judge.) Now, Gentlemen, the plaintiff's witnesses have spoken of the drawing of Mr. Field's wheel. I apprehend that that drawing will be found incorrect; but whether the variations from correctness are important, will be seen by the evidence of the witnesses. Gentlemen, I have but one word more; you see, Gentlemen, having traced the invention up to the time when the two vessels, one called the Chieftain, and the other called the Grand Turk, are made, you see clearly that the reason why the floats take the form they do in those vessels is not from any abstract love of cycloids, or anything of that sort. They are placed back and front there for safety and security; for it is found that although it holds true as an abstract truth in mathematics, that you may generate a cycloidal curve so that the floats enter the water in the same gash, as the workmen say, and thereby weaken the resistance, yet that is only one truth among a great many others; and a little sacrifice of that, or a considerable sacrifice of that, if it is necessary for the purpose of fastening the paddles close down, and you will find so far from its being advisable to cut up the float into six parts, as it is here, that three is the maximum, and that it is believed only two would be even better than three; therefore you see, Gentlemen, that this float is placed there for the purpose of being fixed in a simple and strong manner, which all the witnesses say is the only one which is practically useful, and not from any wish or any knowledge even of this gentleman's invention; not but, if I am correct in what I have already stated, they had a right to do what they pleased with his supposed invention; but I am now saying, suppose his patent to be good, that which we have done is no infringement of the invention claimed in the specification of his patent. Gentlemen, you will have men of science and men of practice brought before you, who will point out many matters into which necessarily I have not ventured to go, because they explain scientific subjects somewhat more clearly than I can pretend to do. Thus, Gentlemen, on the whole, I say there is no pretence for saying that the plaintiff is the first and true inventor; there is no pretence for saying he has made a just, and

Galloway et al.

proper, and full discovery of the best mode of carrying his discovery or invention into execution. And, thirdly, I say, supposing those two grounds mere fallacies, which I respectfully contend they are not, that, finally, there has been no infringement of this patent.

Joshua Field sworn.—I am an Engineer. In 1833 I made an improved wheel, a model of which I took to the Admiralty; it was carefully examined by the Lords of the Admiralty, and fully explained by me and my partner; their Lordships determined on adopting the wheel, and gave orders that the first vessel that required fitting up should have my paddle. It was not applied to the first vessel, in consequence of the machinery having been made by some other firm. I left the model at the Admiralty about a week. When I got it home I exhibited it as a novelty to any persons who wished to see it. I had one of the wheels fitted to the Endeavour: it had the effect I anticipated,—the agitation of the water was quite removed. I continued the experiments some weeks, during which time the vessel was running between London and Richmond, carrying passengers. In 1835 I made a great many experiments, in order to ascertain the properties of various kinds of wheels, chiefly to compare the cycloidal wheel, which I discovered in 1833, with Morgan's and the common wheel. I have carefully examined the plaintiff's wheel, and the specification of his patent; the invention is precisely on the same principle as the wheel I invented in 1833. I had the same object in view, that of arranging the paddles on a cycloidal curve, upon a curve generated by the rolling of the wheel upon a rolling axis—a rolling circle. The wheels on the Chieftain and Grand Turk are on the principle of my wheel of 1833.

Cross-examined by *Mr. Attorney-General.*—I have taken out several patents: I did not take out a patent for my wheel, but the idea of doing so crossed my mind. I think a valid patent for this wheel would be very valuable. The first vessel I fitted up with these paddles was in the spring of 1836; it was the Dover Castle. Her speed was not increased by adopting my wheels. I have fitted up five or six vessels with these wheels. The Great Western is one of them. I did nothing for the Admiralty before August, 1835. I fitted up many vessels in 1833 and 1834, but I did not use my divided paddle. I took the

Bleaden

paddle off the Endeavour after the experiment, and put on the old radial wheel. I did not fit up any other vessel with my improved wheel, either in 1833, 1834, or 1835; the first I fitted up was the Dover Castle in 1836. I commenced my experiments again in 1835, and continued them till about August of that year. I have the specification; the Grand Turk is made according to the specification. The Chieftain paddle has not so many bars, neither are they fixed in the same manner, but it is on the same principle of divided boards, placed on something like a cycloid. I do not consider it is of so much importance that the float-boards should be placed so near to each other as described by the witnesses. My object was to have the same quantity of float as the common paddle, and that the parts should follow one another in succession; it was no part of my object they should be so near together: I consider it immaterial, so far as the propelling goes, what distance the floats are apart. I consider that each float acts independently, I do not see how they can assist each other. It is desirable to have the greatest resistance, but the resistance will not be increased, till the parts are actually in contact. My object was to get the paddles in the water to follow each other on the cycloidal curve, and to do that they must be near each other; but I did not mean to place them so near, with a view to increase the resistance.

James Jarvis sworn.—Examined by *Mr. Alexander.*—I was Captain of the Endeavour in 1839; the model of the wheel used on that vessel is quite correct. We tried it a month or six weeks. I thought it went a little faster than by the old paddle, and made less sea. A great many persons looked at the wheel during that time.

James Sheriff sworn.—Examined by *Mr. Hill.*—I am one of Messrs. Maudsley and Co.'s foremen; I superintended the fitting up of the Endeavour with a paddle of the same construction as the model which has been shown me. She continued her journey to and from Richmond with this paddle about a month or six weeks.

Peter Barlow sworn.—Examined by *Mr. Hill.*—I am Resident Engineer on the South-Eastern Railway; I was engaged by Mr. Field to arrange the results of his experiments, in order to compare them with other paddles. Strangers were admitted to see these experiments. I saw

Galloway et al. v.

the model of the paddle which Mr. Field exhibited to the Lords of the Admiralty; it was made on the cycloidal principle, that is, precisely on the principle which the patent claims.

Cross-examined by *Mr. Attorney-General.*—I have not been engaged in making paddles, but I had great opportunities while living with my father at Woolwich, of seeing a great many wheels. In my opinion if the float-boards of the divided wheel are very close, they will act as one paddle, and will not allow the water to escape. The propelling power of a paddle is the least when it is vertical, and it is greater when it first enters the water. It may be considered a peculiar opinion, but if my work is consulted it will be found that I am correct. I think no advantage could result from keeping the sections of the float-board near together. If they are very near together they will hold the water more, but if at a few inches apart, or any distance to allow the water to escape, it is of no consequence whether they are made at any great distance.

John Kingston sworn.—Examined by *Mr. Alexander.*—I am superintendent of steam-vessels at Her Majesty's dock-yard at Woolwich. I remember the cycloidal wheel that Mr. Field had in 1835; it does not differ much from the wheels of the Grand Turk and the Chieftain; the only difference is that they have not got the cycloidal curve so much. There have been several wheels supplied from the dock-yard on the same principle, with only the float-boards.

Cross-examined by *Mr. Attorney-General.*—There is less trouble in getting up the paddle with two floats than with six. The first Government vessel that was with the split-wheel was the African.

James Simpson sworn.—Examined by *Mr. Alexander.*—I am engineer to the Chelsea Water Works. I was present at some experiments with the cycloidal wheels at Messrs. Maudsley's in 1835: the principle of cycloidal wheels used in the Endeavour, and those of the Grand Turk and Chieftain, I consider identical.

George Blaxland sworn.—Examined by *Mr. Alexander.*—I am engineer to the Commercial Steam-Packet Company. I entered their service in 1837: they had at that time the Kent and City of Glasgow fitted with Gal-

Bleaden

loway's paddles. We had frequent complaints of the rivets getting loose. I found the wheels in such a dilapidated state, and so much trouble and expense in keeping them in repair, that we took them off and put on wider floats, divided into three parts. These repairs were made by Messrs. Maudsleys. I had three boards and raised the first paddles by means of a block, four inches wide, fixed on the radial arm.

The Lord Chief Justice. — What is this evidence directed to?

Mr. Hill.—It shows, my Lord, how he altered the vessels that were fitted up by the plaintiff.

The Lord Chief Justice.—What is the object? There is no plea on record that it is not useful; I suppose it is directed to its not being useful. There is no such plea.

Miles Berry sworn.—Examined by *Mr. Hill.*—I am a patent agent and civil engineer. I saw Mr. Field's cycloidal wheel when it was fitted to the Endeavour, I think in 1833. The floats were divided into two or three portions; they were placed and arranged as steps, which, to me, was then a novelty in the application of floats to paddle-wheels: one was on a radial arm, another in the advance of it, and the third, I think, on the outer arm of the wheel: but how they were exactly fixed in that position, I do not recollect, although, I believe, the model is a very correct representation. I consider that the portions of the floats on the Endeavour are arranged on what Mr. Galloway in his specification calls a cycloidal curve; that is, a kind of curve generated by the rolling circle. I do not call the position of the Chieftain or the Grand Turk placed as a cycloid: they may pass through any given point, which you may say is on a given point on a rolling surface. They are placed in a straight line; and in order to get the one a little advanced, the man puts a block of wood to push it a little further.

Cross-examined by *Mr. Attorney-General.*—When I was on board the Endeavour, I examined the paddles, but not to ascertain at what curve it was at which the floats were fixed. I think it material, that the floats should not be too wide apart, or divided into too many parts. It is material the floats should be so near to each other as to prevent the water escaping between the interstices, and that they should act as nearly as possible as one float-board; and when they are leaving the water they should allow the water to escape as from a sieve.

The Attorney-General.—May it please your Lordship, Gentlemen of the Jury, my Learned Friend in his address to you, has relied on three defences, and with regard to each and every one of those he was equally confident. Now what were the three defences? First, he says there was no infringement. The second is that the specification is defective, it does not disclose to the world the information to which the public are entitled, and that a workman of ordinary skill could not make a wheel of the construction claimed from the specification, and therefore the patent is void. Then the third is, that this was publicly known before the date of the patent, and that Mr. Field not only had made experiments, but that he had brought these experiments to a successful conclusion, and that this is Mr. Field's wheel, which was publicly known before the date of Mr. Galloway's patent.

Now, Gentlemen, before I proceed to consider each of these defences in its order, let me remind you of the *primâ facie* case I have made, that is, my friend does not at all dispute that I have made a case by evidence that entitles me to your verdict, unless an answer has been given to it by evidence. If I had not, of course, he would have called on my Lord to nonsuit the plaintiff; but he does no such thing, he makes a very long and jocular speech. I must say it is very delightful in a case of this sort, to have a little interspersion of jests, although, perhaps, they are not exactly best placed; and if my Learned Friend had had solid arguments to rely on, he would have dismissed his jests, and he would have relied on his arguments. But my Learned Friend, in his long and elaborate and droll discourse, I think, did not at all venture to say that we had not made a case entitling us to a verdict, unless an answer were given to it by evidence; and how could he deny that proposition? Gentlemen, we called two witnesses, and more intelligent, more candid, more temperate witnesses I never wish to see in the witness-box, I mean Mr. Carpmael and Mr. Cottam, men of great science, of great intelligence, wholly disinterested, who told you that until this patent had been taken out, although they were most familiarly conversant with paddle-wheels, they knew of no paddle-wheel of this construction, that it was new, that it was highly useful, and a very great improvement. And they told you that according to the specification which Mr. Galloway enrolled, that any ordinary workman would find no difficulty whatsoever in constructing such a wheel.

Then, Gentlemen, my Learned Friend says, "Well, but you have not called witnesses to show how it was generally introduced, and how successful it has been?" Gentlemen, I must say on the part of the company who instruct my Learned Friend to make use of such an argument that it is most uncandid and most disingenuous, for upon the record, as my Lord has already intimated, the usefulness of this invention is admitted. They do not, on our declaration, alleging that it was useful and a great improvement on paddle-wheels, they do not venture to deny, they do not say by their plea, that it is not useful. If they had, what would have been the consequence? Why, Gentlemen, we would have called witness after witness, and would have occupied twenty-four hours, in showing the utility of it, in showing—the expression I repeat—the brilliant success which this discovery enjoyed. But they admit the utility of it; thus leading us to believe that that would be no question whatsoever in this cause, and now they would taunt us for not having called evidence which would have been irrelevant and impertinent to prove that which they themselves on the record have solemnly admitted.

Well, Gentlemen, we having made out such a case upon such evidence, how was it met by my Learned Friend? You see I am not bound to prove the utility of it, that is admitted, and it cannot admit of any doubt. Gentlemen, they are obliged to admit it, and it gives me the most sincere pleasure to find that several of you gentlemen are very familiar with the subject, and know a great deal more of it than the counsel on either side. But I will venture to say that every one of the twelve gentlemen I have the honour to address, without one single exception, sees at once the great utility and improvement of this invention. It is allowed on all hands, aye, by Mr. Berry, who was extremely desirous, voluntarily, to show the model which he himself in his zeal had made. Mr. Berry

Galloway et al. v.

allows that it is a great improvement, and that it takes off from the shock of the vessel; and if it takes off from the shock of the vessel, it must necessarily accelerate her speed both in the rivers and on the ocean.

We are now, Gentlemen, upon the question whether there has been an infringement. Let us see whether there has been an infringement or not, and when I have considered whether there has been an infringement, I am entitled to suppose that in other respects the patent is free from all objection. There is a conclusive admission that it is useful, that it is a very great improvement; the manner in which it has been introduced into the Great Western, the British Queen, the African, and the various companies which have approved and adopted it, these are abundant proofs of its utility. But, Gentlemen, I admit, that, however useful it may be, however successful it may have been, that unless we prove that it has been infringed on the part of this company, on that issue your verdict will be against me. Now, Gentlemen, at an early stage of this cause you were desirous to do what is exceeding important, and which cannot be done too speedily; you were desirous of making a comparison between the two models. I entreat you, if you have the smallest doubt on this subject, either in the box, or when you leave the box to consider your verdict, to take these models with you, compare the models together, see if there can be the smallest doubt in the mind of any one of you that the Chieftain and Grand Turk are a complete slavish imitation of the wheel, which is made under this specification. Nay, Gentlemen, I do say most unfeignedly, that I am utterly surprised and astonished that my Learned Friend, *Mr. Hill*, should make such an objection, and should rely upon such a defence, because only observe the reasoning to which he himself resorts; he says, are not the Chieftain and the Grand Turk the same as the wheel constructed by Mr. Field? then he says, Mr. Field's is the same as ours: therefore, Gentlemen, things which are like a third will be like each other; why that is demonstration you see, because, according to his own showing, he says, that the Grand Turk and Chieftain are the same as Mr. Field's, then he says, if they are the same as Mr. Field's, they are the same as ours; so much for the infringement. You see my Friend's own case makes out

Bleaden

the infringement, because he says these are the same as Mr. Field's, and he says Mr. Field's is the same as ours; therefore these would be an infringement of Mr. Field's if he had taken out a patent, and if they would have been an infringement of Mr. Field's if he had taken out a patent, they are equally an infringement of Mr. Galloway's.

Now I have disposed, in a very few sentences, of the first defence relied on by my Learned Friend, we now come to one of which he was equally confident with the other two. Now, Gentlemen, we come to the second, and that is, that the specification is not sufficient, upon which subject I think that he has not examined any witnesses except himself. The whole of my Friend's case on this point was a question put to Mr. Field, when my Learned Friend, *Mr. Alexander*, had sat down, and he thought by way of suggestion that it might be worth while just to ask him respecting the specification. Now what does that witness say, bearing in mind that we have proved by Mr. Carpmael and Mr. Cottam, that any workman of ordinary skill, by reading the specification, might have made the wheel; well, how was that evidence to be met? It ought to have been met by calling a number of workmen of competent skill, who might have said that they had tried to make the wheel, but they had tried in vain, that it did not contain sufficient information for discovering the curve either on one side or the other; but no such evidence is given. It is most strange they did not venture to put a question to Mr. Berry, or to any one of the witnesses, scientific or non-scientific, who would not have been at all reluctant to give an answer in favour of the defendants, but they confine themselves to putting the question singly to Mr. Field, who is in fact the defendant in the cause. Well then, Gentlemen, what becomes of this objection which my Learned Friend makes to the specification for which there was no foundation in probability, none in reason which is removed by my evidence, and which his own evidence corroborates that which I laid before you.

Therefore, Gentlemen, we come to the single question upon which my Learned Friend can at all pretend to ask for your verdict, on any of the issues he laid before you, and that is this,—Was this wheel published to the world before the patent was taken out by Mr. Galloway, a good

Galloway et al. v.

test being, had Mr. Field himself done anything which would have prevented him from afterwards taking out a patent, and that patent being a valid patent? If Mr. Field had not disentitled himself by publishing this to the world, to take out a patent himself; then, Gentlemen, the patent of Mr. Galloway cannot possibly be assailed. There is no pretence here for saying that Mr. Galloway took his wheel from Mr. Field; if they were concurrent discoverers, which I think they were not, but if they were not it is not pretended to be said that Mr. Galloway took his discovery from Mr. Field. Who is Mr. Galloway?—Allowed on all hands to be one of the most ingenious men in mechanical science that has ever appeared in this country, allowed to be the inventor of Morgan's wheel, the merits of which it is impossible to over estimate,—the ingenuity of which it is impossible to over estimate, and the only objection to which is, that it is rather complex, that it is expensive, that it may be deranged, and it may not easily be repaired. To be sure, it is the opinion of Mr. Barlow, that most singular philosopher examined here to-day, that it may be said that Morgan's wheel is no improvement; he says there is no disadvantage at all in the common float entering the water obliquely, and in giving a great shock, and he says, that the greatest propelling power is at the very moment when the float-board first touches the water. Why, Gentlemen, it is very true that if that philosophy was sound, it might be said that Mr. Galloway's wheel, called Morgan's wheel, was not an improvement, because the object of that is to prevent it entering so obliquely, and to make it enter like the oar in rowing. But, Gentlemen, Mr. Barlow stands quite alone, he is the founder of a new school on this subject, and he will get no one else to agree with him. Well, is it very unlikely that Mr. Galloway, who had made one great discovery, but which was subject to these objections, that it was expensive and easily deranged, and it appears that he had been devoting himself to find out some other improvement not liable to these objections; is it at all unlikely that he should make this discovery? Why, Gentlemen, it is not only not unlikely, but I have proved it to be the fact, for by two witnesses I have shown it to you, one was Mr. Gibbs, who swears positively that in November before Mr. Galloway's patent was granted that Mr. Galloway communicated to him the whole principle of this

Bleaden

new wheel, exactly such as it now appears on the specification;—now when was the November before the patent was granted? Why, Gentlemen, that was November, 1834, and then you have it in evidence, and that is confirmed by the testimony of Mr. Carpmael, who says that Mr. Galloway applied to him at the end of 1834, or 1835, but Mr. Gibbs swears positively it was in November, 1834, that Mr. Galloway applied to him, and explained to him this new wheel he had discovered exactly on the principle upon which it now rests; well, then, you must therefore take it as a fact in the cause, that Mr. Galloway, pursuing his researches and continuing his experiments, has found out this new contrivance to obviate the difficulties that had been before experienced, and that he had brought this to perfection in November, 1834.

Well, then, Mr. Galloway being the discoverer of this wheel, and having brought it to perfection in November, 1834, he takes out a patent for it in August, 1835, and he specifies it in February, 1836. Now, Gentlemen, the question is this:—Is there any evidence before you to show that, anterior to August, 1835, the wheel had been published to the world? Gentlemen, it is quite unnecessary for me to enter into any minute discussion respecting the principle which is to be found in the model which Mr. Field constructed, and the wheel specified by Mr. Galloway. I think if it were material it would not be difficult to point out some important differences in principle. You might suppose that there was an important difference when Mr. Field began by thinking that he had made a great discovery by a scoop by which, instead of the tail water being diminished, it was to be greatly increased, and there was to be a scoop by which it was to be lifted from the sea; and another reason why I think you might expect that Mr. Field might not arrive exactly at the same perfection with Mr. Galloway is this, that he, after a great deal of cross-examination on my part, came to this conclusion, and gave me at last this definite answer, that, in his opinion, it was quite immaterial at what distance the floats were from each other. You remember, Gentlemen, I had great difficulty with him, but at last he gave me a distinct and definite answer to that question; and he said that, in his judgment, it was wholly immaterial at what distance the floats were from each other, in which he is not corroborated by any other witness

Galloway et al.

who is called on the part of the defendants, and particularly by Mr. Berry, because he tells you that the propelling power must be much greater if the different pieces of the paddle-wheel come so close to each other as to prevent the water running between the interstices, so that they might act like one single continuous float. But Mr. Field said, that was what never entered his imagination; all he thought of was to make the different pieces of the float-board enter the water at the same point, he being utterly regardless of the distance at which they were from each other. And thence, Gentlemen, arises the failure of Mr. Field; because you will observe, Gentlemen, the model I laid before you of the Endeavour's wheel: and that model shows the different pieces of the float to be at such a distance, as that they could not act in concert, they come into the perpendicular at different times; they would rather oppose instead of assist each other, and that, amongst other reasons, accounts for the failure of the experiments with the Endeavour.

But, Gentlemen, again I say, it is not at all necessary that I should enter into any minute discussion as to whether the principle be the same or different. I think, if you will just look at the model, you yourselves, with the glance of an eye, will see that it is materially different where the parts overlap each other, and that it is not on the same principle, and I believe that you will find that all these would be beyond the limits described in the specification of Mr. Galloway. But then the Endeavour, it is said, is on the same model and according to the same principle with the other wheels that were constructed for a long time by Mr. Field. Well, therefore, if that was the case, they would all be on a contrary principle, not one of them would be within the limits Mr. Galloway has specified. Now, Gentlemen, again I say that it is not essential to my case to enter into any minute analysis of that principle: for I have shewn, to your entire satisfaction, that if they were identically the same, which I deny,—if they were identically the same, there has been no publication that would have prevented Mr. Field himself taking out a patent, if Mr. Galloway had not interposed, or which would prevent Mr. Galloway taking out a patent, there being no opposition on the part of Mr. Field.

Now, Gentlemen, I say, with some confidence, because on that subject I have the authority of his Lordship, that

Bleaden

while the showing of the discovery rests merely in experiment, that that is no publication which will prevent the person who makes these experiments from afterwards taking out a patent himself, and will not prevent a contemporaneous discoverer from taking out a patent upon the ground that there has been a publication to the world. And, Gentlemen, I say that the doctrine which is now contended for would be fatal to genius, because it would prevent genius from reaping the reward to which genius is so well entitled,—it would render it necessary that every man making his experiments should retire into a cave, and that he should have some iron gate by which all the world should be excluded, and that no human eye should see his discovery, until he had enrolled his specification.

Gentlemen, I take it, speaking always with the most sincere respect as to the direction in point of law you may receive from *Lord Chief Justice Tindal*; I take it, that while experiments are going on, there is no publication to the world that would prevent a patent being taken out; and you have exactly the question to put to yourselves, if Mr. Galloway had not interposed in the year 1836, and Mr. Field had brought his wheel to perfection, and had happily taken out a patent for it, could that patent have been rendered null and void by showing what was done in the year 1833 by the communication of it to the Admiralty, by the experiments made in the ship Endeavour, by the model that was constructed, or by the experiments that were renewed in the year 1835? Now, Gentlemen, I take it that the law on this subject has been well settled; since *Dollond's* case* it has been acted on again and again, and it was carried still further in the case of *Jones* v. *Pearce*,† respecting the suspension-wheels, where, before the date of the patent, there had been wheels on a similar construction made at Belper, near Dudley, which had run upon the streets, but which were used substantially only as an experiment, and which had been abandoned before this patent for the suspension-wheels was taken out,—they had run two years. But, Gentlemen, I will content myself with reading a very short passage of the doctrine on this subject as it is laid down in the case of *Cornish* v. *Keene*,‡ which I had the honour to argue before his Lordship in this honourable Court. That was a case, as his

---

* Vol. i. p. 28. † Vol. i. p. 524. ‡ *Ante*, p. 314.

Galloway et al. v.

Lordship will recollect, respecting the manufacture of threads from India-rubber, where there were filaments of cotton or wool that were superinduced upon pieces of caoutchouc or India-rubber, and there was there a body of evidence, by which I was somewhat appalled at first, showing the various experiments that had been made, and the various attempts that had been repeated for the purpose of making a similar manufacture; but the jury had these questions propounded to them :—Was it brought to perfection? Did it rest only in experiment, or was it published to the world? Or was it adopted by the world as a perfected discovery? The jury on that occasion found a verdict supporting the patent; and there the verdict was established by the unanimous judgment of the Court of Common Pleas. On that occasion, *Lord Chief Justice Tindal* said,—The first who comes and takes a patent, it not being generally known to the public before that time, that individual has a right to clothe himself with the protection of letters patent, and that, it being afterwards proved that experiments had been made in various quarters upon the same subject previously, would be no answer to an infringement of such patent. Well, does this evidence not class itself under the description of experiment? Why, Gentlemen, can there be any question about it? My Learned Friend, *Mr. Hill*, was a little at a loss to account for this circumstance; if Mr. Field had consummated his discovery and brought his experiments to a successful termination, why did he not take out a patent for it? Now, Gentlemen, it is allowed by Mr. Field himself, that this is a most valuable discovery, and that the patent for it would now be of great value to the patentee; that evidence I had from Mr. Field's own mouth. Why did not Mr. Field take out a patent for it? Oh! as I understood my Learned Friend to say, or as you understood him to say, Mr. Field was above thinking of the paltry profits of monopoly. Instead of taking out patents, he is much better employed in pursuing his discoveries and serving his customers; and if he had made a discovery, such as was made by Watt, in the steam-engine, whereby a fortune might be secured to him; why he would have disdained to ask for a patent from the Crown. But how does that turn out, Gentlemen? Why, Mr. Field has a very sharp appetite for patents. He has taken out no less than three in his time, some

Bleaden

before Mr. Galloway's patent, and one since Mr. Galloway's patent. Well, then, I ask you, as sensible men, if Mr. Field had brought this discovery to perfection, and had thought that it was valuable, what would he have done? Why, Gentlemen, he would have taken out his patent for it. But he says that he did think of taking out a patent for it; and more than that, Gentlemen, Mr. Field says he entered a caveat, so that no other person might take out a patent for the same object. Well, Gentlemen, according to the well-known practice, if he had entered a caveat, he would have had notice that Mr. Galloway's patent was under solicitation, and that Mr. Galloway claimed it. But how was that? Mr. Carpmael tells you there was no opposition. My Learned Friend has alluded to what is well known to be the practice, that it is the duty of the Attorney or Solicitor-General to hear all parties; the decision of the law-officer of the Crown is by no means conclusive, but it is his duty to refuse a patent, if it be shewn by any person that there has been a patent before granted for the same object, or that it is known to any other individual. I may say, I suppose without harm, that I myself have repeatedly, since I had the honour of serving the Crown as Attorney-General, refused patents where it was proved before me, that the reputed discovery was known before. No longer ago than within the last forty-eight hours, I have exercised my judgment in that way; and if Mr. Galloway had solicited this patent, and Mr. Field had thought fit to come and show before the Attorney-General, that he knew this discovery beforehand, and that he was the discoverer just as much as Mr. Galloway was; there can be no doubt that the patent would have been refused. But instead of that, after the caveat had been entered by Mr. Field, Mr. Field allows Mr. Galloway to get his patent.

Now, Gentlemen, do you believe that that was so? It is quite clear that at that time Mr. Field thought his patent was of no value. He gave it up, because he thought it was of no value, and he tells you now that in smooth water it will do very little for accelerating a vessel. Now, he differs from every other witness who has been examined on the other side in this cause. Mr. Field wishes to depreciate the value of the discovery. This was to reconcile what was done with respect to the Dover Castle; he says the only use of it is when there is

Galloway et al v.

a great sea. Why now, all the other witnesses who have been examined on both sides, tell you that it is a great improvement in smooth water as well as in rough water. But it is quite clear that Mr. Field had been of a different opinion, he thought it was of no value, he renounced it, he abandoned it, he had no objection to Mr. Galloway's taking out a patent for it; and it was not until Mr. Galloway had taken out a patent, and had made it public, that Mr. Galloway was likely to derive both fortune and fame, it was then, and then only, that Mr. Field thought fit to interpose.

Now, Gentlemen, let us see what publication was there to the Lords of the Admiralty? It would have been exceedingly material to have seen the letter which was written by Mr. Field to the Lords of the Admiralty. Then why is it not produced? If this letter would have served the purpose of Mr. Field, it would have been forthcoming. Why, what are you to conjecture from that letter not forthcoming? That it would be prejudicial to Mr. Field's claim, and that what he there described was essentially different from that which Mr. Galloway has patented. Well, then, he says in the month of May, 1833, he went to the Lords of the Admiralty, and they said they wished an experiment to be made by Mr. Field himself. Now, Gentlemen, if the test be, Does it rest in experiment? have you not the very language used by Mr. Field himself, because he says, I went to the Lords of the Admiralty, and I wished an experiment to be made, and they told me that the first ship that came in to be repaired should be submitted to me, and upon that ship I should make the experiment: well, but the Lords of the Admiralty never did so; the experiment never was made upon any ship belonging to the Government; and nothing was done respecting the Government steamers that could in the slightest degree be considered a publication to the world. In May, 1833, he applies, he has a promise, but nothing is done in 1833, 1834, and 1835. But was there not plenty of other ships he might have fitted up with this wheel? If he had any confidence in this wheel, why did he not say to some of his customers, "I have made this discovery, I can now give you a wheel much better than Morgan's—much more simple, much more solid, much more economical; do let me fit you up a vessel?" Why, he had twelve ships to fit up in one year, and upon

Bleaden

not one of them did he venture to make the experiment or propose this wheel to any one of his customers; so he goes on during the year 1833. But then he says that he put one wheel upon the Endeavour, and that was, I think, in May or June, 1833. Was not that experiment? Ay, Gentlemen, was not that an experiment which was supposed to have failed, although Mr. Field will not acknowledge that he made use of the expression, that it was an entire failure? Does not his case show that that is the conclusion to which he came? But looking at the account given of this experiment by the engineer, by the captain, by Mr. Berry; what was it but an experiment? They take off only one wheel for the purpose of a trial, and we are told it ran about a month or six weeks. It required more steam, showing that it was a very active conductor, and that there was a great loss of power; that was one reason why it was given up. What was done at the end of six weeks? Do they put on another wheel according to the newly-invented cycloidal wheel? No; on the contrary, they take off that which was supposed to be the cycloidal wheel, and they put on the old radial wheel; and so the Endeavour ran from that day to the present hour with her old-fashioned wheels. Is not this an experiment? Why it was. If Mr. Field had found that that experiment had succeeded, he would have put a pair of wheels on the Endeavour. But instead of doing that, he does nothing from the summer of 1833 to the spring of 1835. Now, Gentlemen, you will be good enough to bear in mind, before the spring of 1835, Mr. Galloway had prosecuted and completed his invention, for it is in evidence before you, that in November, 1834, he had completed his wheel. Well, then, what takes place in the year 1835 on the part of Mr. Field? Why, Gentlemen, he says that he renewed the experiment, he had no confidence at all in the operation of this wheel, but he made experiments on this wheel along with others; he had a piece of water with a little island in the middle of it, and he made experiments with this wheel among others; and there was a table which shows the result of those experiments. These experiments were after Mr. Galloway had brought his wheel to perfection, and even now they are only experiments; and these experiments were abandoned in July, 1835.

Now, I have shewn you—I have exhibited to your faith-

Galloway et al.

ful eyes, a model of what was the wheel of the Endeavour. I have shewn that that must necessarily fail. The wheels of the Dover Castle, which Mr. Field fitted up in 1836, were constructed on the same principle; they likewise failed. So that, as late as 1836, Mr. Field himself does not know the principle on which these wheels are to be constructed, so as to gain the object that was in view. Then, Gentlemen, you will consider, that now the wheels of Mr. Galloway are coming into play, they are adopted by the defendants in this action, one after another, and there was ample time for them to judge how the wheels had answered, and whether they would produce the desired effect. A year after that, they had to pay us 40*l.* for a license, to construct wheels according to our specification. I think that was pretty good evidence that the specification was sufficient, because it was 40*l.* to use that specification, and to put the patent in force, without their being subject to an action. Well, then, under those circumstances, you see that even in the year 1836, Mr. Field has not acquired sufficient skill, whereby he can construct wheels, which will gain the object in view. But then, Gentlemen, as Mr. Galloway's wheels come into use, his skill improves.

Well now, Gentlemen, you see the Dover Castle still fails, and it is not until the year 1837 that Mr. Field fits up the African; ay, but now he is in full possession of the secret, because in the year 1838 he fits up the Great Western, allowed to be on the same principle. Will it be said, that the Great Western has derived no benefit from this wheel? Is it not matter of notoriety, and can it be at all disputed, that the wonderful achievements of that vessel are very much to be ascribed to the construction of her wheels, whereby it would appear, that she can even go at a velocity that could hardly have been anticipated? Well, now, this is not a failure; the Endeavour was a failure; the Dover Castle was a failure; how the African succeeded we know not, but the Great Western, which in the year 1838, is fitted up by Mr. Field, that is the most successful exploit.

Now, Gentlemen, has Mr. Field any reason to complain? He, Gentlemen, set no store by the discovery; he says that he knew it in 1833; he renounced it; he allows Mr. Galloway to take out the patent; Mr. Galloway takes it out; Mr. Galloway has the success I have mentioned to

Bleaden

you; Mr. Galloway sells his wheel to the Commercial Company, and other companies that employ him, and it is not until the year 1837, or two years afterwards, that Mr. Field, in respect of his abortive experiments, comes to try to set aside the patent of Mr. Galloway. Gentlemen, I say this is not handsome treatment of Mr. Galloway by Mr. Field. If Mr. Field wished to avail himself of his supposed discovery, he ought to have taken out a patent himself. He would have taken out a patent for himself, as he did for his boiler, and other things, which he thought entitled him, as an inventor, to a patent. He ought to have opposed the patent of Mr. Galloway; but he is not to lie by, and when Mr. Galloway's patent has succeeded, then to rake up these abortive and forgotten experiments, and in respect of them to say that Mr. Galloway's patent is to be voided. Mr. Field will have no reason to complain, when you have given your verdict in favour of Mr. Galloway, because he himself has pronounced an opinion upon his own discovery; he takes no measures upon it for years and years, as they roll on, but he allows Mr. Galloway, as an ingenious man, who had discovered the wheel, he allows him to take out the patent, and then, when Mr. Galloway has succeeded, and thinks he is about to receive a remuneration for all his labours, then he says, I had discovered this wheel before, and I will show that this patent is wholly invalid. That would be very unhandsome, and very iniquitable now, and I am glad to think, that it is what the law of England will by no means sanction.

I think I have now disposed of all the defences set up by my Learned Friends. There was the infringement; the defect in the specification; there was the publication to the world before the patent of Mr. Galloway; upon all these my Learned Friend relies, and I think upon none of them will your verdict be pronounced against my client, Mr. Galloway. I think you will see that this was a most useful invention: that is not disputed; you will find that it has been infringed; you will find that the specification was sufficient, you will be of opinion that all Mr. Field has done rested merely in the way of experiment, and that he himself had done nothing to bring those experiments to a successful issue; that Mr. Galloway, before those experiments had been brought to a successful issue, had taken out a patent; he is the grantee of the Crown; and I hope,

Galloway et al. v

Gentlemen, by your verdict, he will have his right established, and that he may long enjoy it.

The Lord Chief Justice.—Gentlemen, this is an action brought by the plaintiff, Mr. Galloway, against Mr. Bleaden, the secretary to the Commercial Steam Packet Company, to recover nominal damages, but to recover a verdict, on the ground that the defendants, the Commercial Steam Packet Company, have infringed a certain patent which he had taken out, namely, a patent that was granted to him on the 18th of August, 1835, for certain improvements in paddle-wheels for propelling vessels. In answer to this action the defendants set up three grounds of excuse: first, they say they are not guilty,—that is, in other words, that the paddle-wheels they have employed in the Chieftain, and the other ship, called the Grand Turk, are not an infringement of the patent; then a second ground of answer that they set up is this,—that the nature of the invention, and the manner of its performance have not been truly described in the specification. Now that is a good answer in point of law; it is a condition on which the party to whom the patent is granted obtained it, and it being a condition, it must be performed strictly,—that is, he must communicate by his specification to the world, a sufficient mode of making this improvement, of which he has the exclusive privilege for the fourteen years, in order that when the patent has expired the public may have the full benefit of it on reference to that specification; then the third ground, the remaining ground, of the defence is, that the supposed invention was not a new invention, but was used in England before the grant of the patent; that again is a sufficient answer to the validity of the patent. If the Crown was deceived, intending only to grant a patent to the original inventor of a commodity or thing that was not generally known or used in England before, that, in point of fact, instead of being, as the Crown thought it, a new invention unknown to the public before, it was not a new invention, but used in England. Therefore you will have to say on the evidence you have heard on these three different points, whether you find your verdict on all or any of them for the plaintiff or defendants.

Criterion of Specn

Now, with respect to the first, that the wheel is not an infringement,—that the paddle-wheel used by the defendants is no infringement of the patent granted to Mr.

Bleaden

Galloway, the evidence lies in a very narrow compass. There have been two witnesses called on the part of the plaintiff, namely, Mr. Carpmael and Mr. Cottam; and they were asked, looking at the wheel of the Grand Turk, and the other vessel, the Chieftain; they have been asked, having read the specification and seen the model which was produced before them, whether these two wheels are not an infringement, a copy made after and agreeing with the principle laid down in the patent; and they unequivocally say they think it is. We have had no witnesses called on the other side to whom that question has been distinctly put, who have been asked whether they believe it to be an infringement or not, but every witness was asked this question, whether it agreed with a certain wheel that had been supposed to be invented or discovered by Mr. Field, in 1833, and put on board the Endeavour. That was the way in which every question was put; not a distinct question so as to bring forth a distinct answer on the subject of the infringement, but putting it in that collateral way, meaning upon the ground, as the defendants contend, the plaintiff's invention is borrowed from the one which was known before; that, therefore, virtually, they wish to show the two inventions were in fact the same: but it certainly seems to me, that as they did not put the question distinctly and directly, whether in the opinion and judgment of the defendants' witnesses, such infringement had taken place or not, that they rather fortified the plaintiff's case than weakened it, by drawing out from their witnesses that it was made on the same principle as the wheel that was put on board the Endeavour, the main part of their case being, as they pretend, that this was a discovery which the plaintiff himself has since adopted and got a patent for, because if it is made on that principle, and is, in effect, an infringement of the wheel of the Endeavour, it seems to follow, by no very weak inference or conclusion, that it is virtually also an infringement of the patent; however, on that, judge for yourselves.

The next answer that is put in on the record is, that the plaintiff, when he enrolled the specification of this his patent, did not so describe the matter in the specification as by law he was required; that he had not, in the language the plea uses, "truly described his invention;" and if there is a want of clearness, so that the public cannot afterwards avail themselves of it, much more if

Criterion of Specon

Galloway et al. v.

Criterion of Specn

there is any studied ambiguity in it, so as to conceal from the public that which the patentee for a term is enjoying the exclusive benefit of, no doubt the patent itself would be completely void. This is also a question to be determined on the evidence brought before you. If it had

Criteria of Specn

appeared on the face of this specification that it was so manifestly ambiguous in the terms that it used, or on reading it, no person of ordinary sense and judgment could make of it that which the party professed to disclose, and which he was bound to disclose, that the specification was not a compliance with the patent, then no doubt it would have been void; but it does not appear to me at all, upon looking at it, that there is such doubt and difficulty on the construction of the specification itself. There has been a great deal of stress laid on what we heard so often, the coincidence of the rolling cylinder which is to represent the rate of going of the vessel, and the wheel which forms the circle or boundary of the lower part of the floats, and a great many observations have been made, that certain acts that may occur are not provided for in the specification, for in this specification it does not, I confess, appear to me on the face of the patent that such is the necessary conclusion, because you are to take the patent, not by itself, but with reference to the figures; and when you look at that figure which is called fig. 1, and compare it with the statement made in the specification, I confess I am unable to say on merely perusing it, which is all I am bound to say, that there is that degree of difficulty, or, in fact, that I feel any great difficulty on the subject. But the main question on this point is for you, Gentlemen, and

Criterion of Specn

that is, whether it is such a fair and clear statement, that a person, with a competent degree of knowledge upon the subject-matter to which the patent relates, would be able to make that which the patentee, the plaintiff, now enjoys the exclusive privilege of. He has called one or two persons,—both the two first witnesses, and, I think, the third also, certainly the two first,—who state that, in their judgment, a perusal of this by a workman, who was employed in manufactures of this nature and description, would qualify him to make a wheel of the nature of those, and in the same manner, with the same properties as those which the plaintiff at present enjoys under the patent. I do not find that even that is broken in upon by the other side, for there is no witness called to whom that question

Bleaden.

is put, except Mr. Field, and Mr. Field's answer to one part of it, where the question is put to him, is this,—he says, "I have read the specification, and looking at the specification, (which was the main point that was put to him about the rolling circle;) I think the rolling circle and the inner circle of the floats, are intended to be the same circle." He says it is not expressed in the specification whether *d*, belonged to the rolling circle or to the circle of the edges of the floats. If it belonged to the rolling circle, all he says is this,—"I do not think a workman would know whether the point, little *d*, was the point belonging to the inner circle or the rolling circle." That is his judgment. If you have had an opportunity of looking at the figures as connected with the specification, I confess in my mind it does not appear a subject-matter of doubt that that little *d*, is the point that is formed by the surface of the common radial float with that inner circle; and this only gives you the point upon which to set off, on such occasion, to form your cycloid for the new form of floats, provided that may or may not be the case.

Now, Gentlemen, the third and last is the main point in this case, whether this was an invention new at the time, or whether, in the language of the issue that is raised for your consideration, this improvement was new as to the public use and exercise thereof in England.

Now the date that I have to call your attention to is the date of the patent, namely, the 18th of August, 1835; what you have to ask yourselves is, whether, on the evidence, that which Mr. Galloway has described in his specification was new at that time, or whether it was known and practised before in the realm of England.—Undoubtedly if it was, there is an end of the patent; upon that point the law is undoubtedly now understood to be this,—a mere experiment, or a mere course of experiments, for the purpose of producing a result, which is not brought to its completion, but begins and ends in uncertain experiments,—that it is not such an invention as should prevent another person, who is more successful, or pursues with greater industry the chain in the line that has been laid out for him by the preceding inventor from availing himself of it, and having the benefit of it; therefore the main point in this case is, whether all that is allowed to have been done by Mr. Field rested in experiments, and

Criterion of experiment

unsuccessful experiment not conducted to its full result, or whether it was a complete discovery of that which now forms the subject-matter of the patent.

limit of evidence of scientific witnesses as to novelty

Now, Gentlemen, on that the evidence of Mr. Carpmael and Mr. Cottam is, as you will suppose, only general, because they are called to negative that this was known before. Therefore all they can say is, that they are persons who are conversant with subjects of this description, and pass their time and part of their lives in understanding the nature of patents, and in following up and discovering what are the inventions that are going on from week to week, and all they say is, that they had not before heard that there had been such a discovery previously to the issuing of the patent in August, 1835. Therefore, that is enough to call on the other side, to show affirmatively, that it was not new, that it was an old matter, and used, and exercised before, within the realm of England, and you must say, whether the evidence which they have brought before you, in the way in which it seems to me it ought to be understood, has brought your minds to that conclusion or not. That is a mere question of fact, which you must decide for yourselves.

Now, upon that, Mr. Field is first called, and gives an account of all that he had done, in the way of invention, and carrying that invention to the purposes of practice, and the account he gives is this:—he says, "In the year 1833 I made an improved wheel, a model of which I took to the Admiralty." Then he gives you the original model, that he made at that time. He says, "This is the one I made it from, and I conceived the idea of dividing the board into a curve, which curve I obtained by holding my pencil at the edge of the supposed water line; I then placed the same quantity of surface of paddle in four bars, that is, a cycloidal curve." Then he says, "This model shows it better, that is the new model that I made; at that period we were employed by the Admiralty, and had just completed six large steam-engines. I wrote to the Admiralty." Then he says in consequence of that, he afterwards went and attended there. He says, "The model was produced, and explained by myself and partner to the Admiralty; they were much pleased, and they determined to adopt it; they said the next vessel that arrived should have the improvement." A vessel did arrive; however, he had not at that time the vessel, because it did not happen to be of their own make, but some other person's. And then he says, "The model remained about a week in the Admiralty; we kept it in the drawing-office of our manufactory; we showed it to any one that came, who wished to see it, and to any persons concerned in steam-vessels." Then he goes on to say, "I made an experiment myself in a small vessel of our own." The question you are to determine is, whether in the evidence the thing itself was complete, so as to be used, or whether only a series of experiments were going on? Up to this time the model had been shewn, but not any actual paddle-wheel made; much less up to the time we are now discussing, had any one been applied to any real practical use. Now comes in, what he calls himself, an experiment. "In a small vessel of our own, the Endeavour,—which is a steamer from London to Richmond; we put a paddle upon it; this paddle is suited for the sea and not for fresh water; we put one fresh paddle on the wheel of the Endeavour; the result was, the agitation of the water was quite removed, or scarcely perceptible; we continued the experiment (as he called it) for some weeks; we then restored the former wheel." It is afterwards explained, that the reason why this wheel was taken away, and the old one restored, according to the captain's account, was because the boiler was not large enough to make steam sufficiently fast for this, which had a quicker rotary motion. Then he goes on to say, that in 1835 a great many experiments were made. "I got this original knowledge in the year 1833." And when we are discussing whether he had brought that to any degree of perfection at that time, so as to be a matter that was known, and capable of being applied to vessels at all; it is odd and singular enough (but that will be for your consideration) that he should go on in 1835 making a great many more experiments. He says, "In 1835 we made a great many experiments, of which the general character was to ascertain the various qualities of wheels, chiefly cycloidal wheels, and comparing these wheels with Morgan's wheel. I had a very extensive apparatus constructed, for the purpose of these experiments; it stood in a very public part of the premises; no person was excluded; a great many saw it; it was in the thoroughfare of the manufactory. We had between 400 and 500 employed at that time in our manufactory." He says how the apparatus was constructed (which I think was not very material);

criterion of experiment

continuance of mere experiments evidence against "public use."

Galloway et al. v.

but that apparatus they constructed merely for the purpose of deciding upon these experiments. Then he says, "These experiments were made between the 16th of April and the 12th of June, 1835. We had a person solely employed in these experiments; no secrecy whatever was observed; on the contrary, we invited people to come and see them. I first heard of the patent taken out by Mr. Galloway on the 8th of September, 1835. I remember a model put up by him in the Adelaide Gallery." It appears, therefore, from the month of September, 1835, Mr. Field was fully conscious that there had been this patent granted to Mr. Galloway, and we do not hear of any opposition to it for a very considerable period afterwards. Indeed, on the part of these defendants, a year afterwards, so little are they informed, or so little do they know, that there had been a doubt as to the validity, that they pay for the use of these floats; for a vessel of theirs, called the Calpe, 40*l*., having previously, in the years 1835 and 1836, just after the granting of the patent, had the same patent improvement applied, at a much larger sum, to other vessels. Then he says, "I have carefully examined the specification of Mr. Galloway; I have seen the models produced; the principle laid down in that specification is precisely the same as mine; I had the same object in view, that of arranging the floats in a cycloidal curve; I have not been able to find in Mr. Galloway's specification anything whatever different to what I had in view, except what I had before; the advantages mentioned in his specification are the very same advantages that I contemplated and proposed." Gentlemen, then he is cross-examined as to this point, and he says, "I have taken out patents myself, altogether three; one of them a little time ago; the idea crossed my mind for taking out a patent for this discovery. I entered a caveat for my discovery in 1833. I never did anything upon it; it is now a very valuable wheel; it is now in general use; a valid patent for such a wheel would be very valuable to the patentees; it would be valuable to me; I never did it. I continued making experiments till July, 1835." Certainly, it is not an improper observation, one that you should bring before your own minds on this question, that is, whether it was the invention of Mr. Field before Mr. Galloway, and an invention carried so far to perfection, that the matter might be known and used in England? It is not an improper observation that, as he had entered a caveat at the office of the law officers

Bleaden

of the Crown, he must have had notice of this, the patent would not have passed, without some notice being given to him that such patent was being taken out, and yet you see, though he had put in his caveat in the year 1835, and made experiments from April to June, and goes on making experiments every preceding month to 1835, he does not at all interpose, or set up his claim, at that time, to take out a patent. I do not mean to say he was bound to do it, or that his not doing it will decide this question at all, but, when we are considering the course that men ordinarily pursue in looking after their own interest, the question is, whether he is perfectly to be depended on, as to the exact identity of this discovery, that this, which is now the subject of a patent, was the very discovery, which he himself had made? That is for you, and not for me, to determine. Then he goes on to say, "I continued making experiments till July, 1835. I never fitted up a vessel for a customer, till the Dover Castle, that was the name of it; the wheels were afterwards altered, from three boards to two, and so they continued. That vessel did not go faster nor slower than before, but the vessel was better for the sea; she was always a slow vessel. The next vessel we fitted up with split boards was the African, that was in the summer of 1836." That is, after the period when this patent was granted; therefore, anything that is done after that, if it is a wheel of the nature and description of that for which the patent is granted,—that is not to be brought in evidence against the plaintiff as a prior discovery, except so far as that the party who gives the evidence says that it was upon his own principle, and not upon the principle of the patent. The mere fact of applying it so late as the year 1836, the year after the patent was granted, would not of itself, of course, show that the subject-matter had been known, and used in England, a year before. Then he says, "I am not quite positive that I fitted up any but the Dover Castle with wheels on this construction. I fitted up the Great Western with wheels of this construction, in the year 1838: the wheel is now in great repute. I had no knowledge of the floats being divided in this way, before I did so myself. I did nothing for the Admiralty before August, 1835." Then in fact, he says, "I did not do it till the summer of 1836. I did take off the new wheel, after having satisfied myself with the experiment, and I put on the old boards again."

Question bearing upon the point of novelty – for jury & not for Court.

Galloway et al. v. Bleaden

He says, "We did nothing in 1833, 1834, and 1835; in 1835 we commenced our experiments, and we still continued to make comparative experiments." Then he goes on to say something more as to the specification, which is not material. [His Lordship, after reading the evidence of the other witnesses, proceeded as follows:]—

Now the next point, as it seems to me, for your consideration, is, whether you are satisfied or not, that at the time when this patent was taken out, the invention for which the patent was obtained, was a new invention, and not used publicly in England, which are the words of the plea? That there had been many experiments made upon the same line, and almost tending, if not entirely, to the same result is clear, from the testimony you have heard, and that there were experiments known to various persons; but if they rested in experiment only, and had not attained the object for which the patent was taken out, mere experiment, afterwards supposed by the parties to be fruitless, and abandoned because they had not brought it to a complete result, will not prevent a more successful competitor who may avail himself, as far as his predecessors have gone, of their discoveries, and add the last link of improvements, in bringing it to perfection. If that is the case, the plaintiff is entitled to your verdict. If it was then known, at the time when he took it up, and was publicly known and used in England, then, in that case, the patent is invalid, and, in that case, you would find your verdict for the defendant. If you find it for the plaintiff, it will be only nominal damages; the question is not here for any profits, but simply to decide the rights between the parties.

experiment distinguished from "public user."

[The jury, without retiring from the box, turned round and consulted together.]

The Foreman.—We have agreed upon our verdict, my Lord; our verdict is—for the plaintiffs.

The Attorney-General.—Will your Lordship please to certify about the special jury?

The Lord Chief Justice.—Yes.

The Attorney-General.—Perhaps your Lordship will likewise have the goodness to certify under the Act, as to the merits of the invention? it is under sect. 5.

Mr. Richards.—Has your Lordship this Act before you?

The Lord Chief Justice.—I need not certify at Court, it can be done at chambers.

Crane v. Price et al.

CRANE *v.* PRICE AND OTHERS.

In the Court of Common Pleas before Lord Chief Justice (Sir N. Tindal) and a Special Jury.—Feb. 11, 1840.

THIS was an action for the infringement of a patent granted to the plaintiff on the 28th day of April, 1836, for "An improvement in the manufacture of iron."

Sir Frederick Pollock, Mr. R. V. Richards, and *Mr. Montague Smith*, appeared for the plaintiff; and *Mr. Solicitor-General* (*Wilde*), *Mr. Sergeant Bompas*, and *Mr. Rotch*, for the defendants.

The declaration was in the usual form, to which the defendants pleaded—1. Not guilty. 2. That the plaintiff was not the true and first inventor. 3. Setting out the specification, and averring that the said improvement was not a new manufacture, invented by the plaintiff, within the intent and meaning of the statute, as to the public use and exercise thereof. 4. That the nature of the said invention, and in what manner the same was to be performed, were not particularly described by the said specification. 5. After setting forth the specification by reference to the third plea, and the proviso in the plaintiff's letters patent against their interfering with any previous grant, the plea stated the grant of letters patent to J. B. Neilson, and averred that the hot blast was, before the plaintiff's patent, in public use with Neilson's license in the smelting of iron, and was the hot-air blast in the specification mentioned and referred to. The plea then averred that Neilson's patent was in full force, and that the plaintiff could not use the said hot-air blast without Neilson's license, and that he obtained such license before the grant of his patent; and averred further, that the using by the plaintiff of the said hot-air blast, as in the specification mentioned, was a using and imitating of Neilson's invention, whereby plaintiff's patent was void.

The plaintiff in his replication took issue on the first, second, third, and fourth pleas; and to the fifth plea replied, setting forth Neilson's specification, and averring that the said invention, as described and ascertained in the said specification of the said Neilson, was not and is not the same as the said hot-air blast, and the machinery and apparatus adapted for the application thereof, mentioned and referred to in the plaintiff's said specification,

Crane

as then being well understood and extensively applied in, &c.; nor was nor is the using by the plaintiff of the said invention, as described in his said specification, a using or imitating of the invention of the said Neilson, as described in his said specification, contrary to the form and effect of the said proviso; which averment was traversed by the defendants in their rejoinder.

The following notice of objections was delivered with the pleas:—1. That the alleged invention mentioned in the declaration which the plaintiff in his specification claims, and alleges to consist in the application of anthracite or stone coal and culm, combined with the using of hot-air blast in the smelting and manufacture of iron from iron stone, mine, or ore, is not a new manufacture within the meaning of the statute of 21 James I., c. 3, s. 6, for which a patent can be granted, but only using at the same time a well-known article—namely, anthracite, or stone coal or culm—and of the hot-air blast (the latter admitted in the plaintiff's specification to be then well known), each separately in use for smelting and manufacturing iron before the date of the said letters patent. 2. That anthracite, or stone coal or culm, had been publicly used as the only fuel in the smelting and manufacture of iron by Mr. Thomas Harper, at his furnace at Abercrave, in the county of Brecon, and had been so used, mixed with other fuel, by the British Iron Company, at their works at Abercrave aforesaid, and at the Yniscedwyn Iron Works, the Landore Iron Works, the Millbrook Iron Works, and the Neath Abbey Iron Works, in the county of Glamorgan, before the date of the said letters patent; and the alleged invention of the plaintiff is only the use of anthracite, or stone coal or culm, with hot-air blast. 3. That the using of hot-air blast in the smelting or manufacture of iron was not the invention of the plaintiff, but was well known and in use before the grant of the said letters patent to the said plaintiff, as admitted in the specification thereof; and the alleged invention of the plaintiff is only the use of the said hot-air blast with the well-known anthracite, stone coal, or culm; and that the hot-air blast was used in the smelting and manufacture of iron prior to the said letters patent, at the works of the said plaintiff, called the Yniscedwyn Iron Works, at the, &c. (specifying a great number of other works and places), and also at a great many iron works in the kingdom,

Price et al.

too numerous to be individually specified. 4. That the alleged invention of the plaintiff necessarily involves the use of another invention, which was patented before the date of the plaintiff's letters patent—namely, the hot-air blast of J. B. Neilson; and that the application thereof to anthracite or stone coal, which was a well-known fuel, was an application all persons were and are at liberty to make, who had permission to use the said invention of the said J. B. Neilson. 5. That the exclusive use of the hot-air blast having been previously granted to J. B. Neilson by letters patent, the subsequent patent granted to the plaintiff for the same invention is void. 6. The anthracite, or stone coal or culm, having been well known and in use as a fuel prior to the said plaintiff's patent, the application of such fuel to the smelting or manufacture of iron by well-known methods, is not a new manufacture within the meaning of the statute. 7. That the use of the hot-air blast, described in the said specification, produces substantially only the same effect when the anthracite, or stone coal or culm is used as fuel in the smelting and manufacture of iron, as when any other kind of coal or coke is used for the same purposes. 8. That the specification is defective, inasmuch as it does not describe the kind of furnace to which the alleged invention is applicable, and it is not applicable to all kinds of furnaces. 9. That the said specification does not clearly state whether or not it is intended to apply to the use of anthracite, or stone coal and culm, as the only fuel, or whether it is intended to include the use of anthracite, or stone coal and culm, together with other fuel.

Sir Frederick Pollock.—May it please your Lordship. Gentlemen of the Jury, I have to state to you the circumstances under which the present action is brought before you, the foundation of the plaintiff's claim, and generally, the evidence by which that claim is to be supported. Gentlemen, before I call your attention, and my Lord's, to the issues which are joined in the present case, which, presently, I mean to do with some particularity, especially that issue which I observe has already caught my Lord's attention (I mean the issue arising out of the fifth plea), it will be necessary for me to give you some general outline of the character and the nature of the plaintiff's invention, in order that you may be better able to appreciate the evidence by which the claims of the plaintiff will

Crane

be supported. Gentlemen, the plaintiff is a manufacturer of iron, and has been the whole of his life employed in the manufacture of iron by smelting it from the ore. His works are carried on at a place called Yniscedwyn, in South Wales. The defendants are also manufacturers of iron, and their operations are carried on at some works that are called Neath Abbey.

I dare say you are all of you aware, in a general way, of the nature of the smelting of iron. The ore of the iron is first roasted, which reduces it to the state nearly of an oxide of iron mixed with earth. It is then smelted, an operation which consists of exposing it to the action of some carbon at a very high temperature; and in this state it flows down to the lower part of the furnace,—when the furnace is opened the iron flows away, constituting that sort of iron in its first state called pig-iron, or melted iron, cast-iron in the various states in which we find it. Gentlemen, this was a process that, in former times (as you may readily suppose), was performed chiefly by wood, that is, by charcoal or charred wood. As far back as the reign of James the First, the woods of this country having been exhausted, it became of great importance to apply (if possible) the immense quantities of fuel that were ascertained to be in various parts of this kingdom, and to apply that fuel instead of charcoal, which by that time had become very dear. Lord Dudley, whose name I dare say your Lordship remembers as constituting an exception to the statute of monopolies—in that statute the name of Lord Dudley is excepted from the operations of the statute repealing all past monopolies—Lord Dudley first practically showed that iron could be manufactured from pitcoal, or bituminous coal. Now, I do not propose to occupy you in any detail of the process which he adopted. For many years the process was comparatively imperfect. Iron was made in this country in great abundance: as the process came to be better understood, and the vast powers of the steam-engine were applied to increase the blast that worked the furnaces, greater and greater results followed. Gentlemen, it was discovered that the manufacture could be considerably improved in various ways. The practice of coking the coal was suggested; that was a great improvement. The common coal, whether it be the best sort that comes from the Wallsend at Newcastle, or

Price et al.

whether it be the Staffordshire or the Yorkshire coal, or the cannel coal, is all, more or less, composed of bitumen as well as charcoal; and it has a large portion of earthy matter. Bitumen is that which you see blazing away in a cheerful fire; that is the substance which furnishes gas, which we consume in the streets; and this bituminous coal forms one large class of coal, differing entirely from anthracite, or stone-coal. The stone-coal consists of an exceedingly pure and very compressed, dense, hard charcoal. The proportion I am now stating very loosely,—it is not very important that I should be very nice in these points; but taking it now that common Newcastle coal consists of 50 or 60 per cent. of carbon, 20, or 30, or 40 per cent. of bitumen, and the rest earthy matter. The stone-coal has no bitumen whatever; it consists of, perhaps, out of 100 parts, upwards of 90 in the best specimens will be pure charcoal, a very small quantity of volatile matter, and a very small quantity also of earthy matter; but it is, as nearly as may be, a hard, dense, compact charcoal. Its appearance, to those who are at all familiar with it, is immediately indicated by its lustre—which is vitreous, and almost metallic,—and its structure, which differs from that of common coal; it does not break into those cubes which common coal does; it is remarkably hard, and is, for many purposes of combustion, wholly and entirely useless. If you put it into a common fire—an ordinary kitchen fire, for a considerable time, it will give you an impression that you had put in a large piece of stone, for it would remain dark and cold, apparently not at all contributing to the combustion, but rather impeding the fire. It would at length, if the heat were considerable, itself ignite, and burn very slowly, with no flame, but not at all giving out, under these circumstances, the heat that you might expect from a substance composed almost entirely of charcoal. The charcoal, however, is in an entirely hard state, so compact and dense, that apparently it is intractable under ordinary circumstances; and if you apply it, if you observe its dulness, if you have now got, by great care and artifice, a fire well burnt up, composed chiefly of this coal, if you took a large pair of bellows by way of making it burn much brighter, which of course you would do with any ordinary fire, the result would very much disappoint your expectation, for you would blow it out. Gentlemen, this fuel

Crane v.

was known to exist for centuries almost; it was known to be of no use for domestic purposes; it had never been applied to any of the great processes of smelting; attention had been called to it in various ways. It was thought that there must be some mode of employing so extensive and apparently so tempting an article for experiments, so promising a subject for the philosopher, or for the enterprising manufacturer. You will find that it had been the subject of much consideration, of various attempts, and some patents; it had been the subject of even prizes; rewards were offered for the purpose, to any person who could make use of it, or bring it to bear advantageously in the manufacture of iron; until the time that Mr. Crane first discovered, that, provided you would use a blast previously raised to a temperature of about 600 degrees of Fahrenheit; until Mr. Crane had discovered that which was the subject with him of repeated experiments, and that sort of expense which I dare say you are aware of, when the subject of experiment is a furnace on a very large scale: but having distinctly ascertained the fact, Mr. Crane took out his patent, enrolled his specification, and published to the world that which he had done. Gentlemen, there has probably very rarely been a discovery of this importance and magnitude, the full value of which was instantly appreciated. Within a very short time, the value of all the property around Mr. Crane's premises, and around all the other premises that under his license had began to work, was greatly advanced in value. I believe, Gentlemen, I speak short of the mark, when I say that property became three times the value that it was of before. The iron itself was discovered to be much more abundant in quantity; the same weight of ore gave what they call a larger yield of metal; and the metal that was obtained was itself of a much more valuable quality, on which I shall say a word or two presently; and the process itself was one of considerable economy compared with the other, for a smaller quantity of fuel was actually used. And, Gentlemen, these advantages were so clear and acknowledged, so instantly felt in the neighbourhood where Mr. Crane lived, that they did him that honour, which is certainly more frequently done in modern times than it used to be formerly; there was a very large assemblage of most of the persons connected with the land and the iron trade, who assembled

Price et al

together in honour of Mr. Crane, a meeting of all the influential people in that country, who met together to give Mr. Crane a dinner, and he was undoubtedly then hailed as one of the greatest benefactors to his country that had ever come forward to advance the manufactures, and thereby the prosperity of the country. And the effect of this discovery is, that we shall be able, not merely to compete on the subject of iron of the best sort with any country on the face of the globe, but that we can now, by this process, manufacture a much better iron than any that we have been in the habit of importing for any purpose from any part of the world. I speak chiefly, of course, of Swedish iron, which any one knows, who knows anything of the history of iron, has long been considered, for certain purposes, the best iron; and even at the present time Swedish iron no doubt is used for some purposes, although to a much less extent than was the case a few years ago. Gentlemen, Mr. Crane has brought into use—into most efficient use, large tracts of this description of coal, which before his invention undoubtedly was considered to be of little or no use, beyond furnishing fuel to some few manufactories, and the supply that was required for Arnott's stove. It has created a source of wealth wherever stone-coal exists that had no existence before, probably the value of it is more than quadrupled, for instead of being an article of no value, it has become now of a value as great as bituminous coal itself, and for the purposes of this manufacture its tendency is entirely to supersede it,—wherever it can be obtained it would supersede it. Gentlemen, it is almost as if a person could discover a value—an available and appreciable value for those vast mountains of rock, those vast masses of rock and granite and other things, which you may observe in parts of Scotland and Ireland and the north of England; if you could give to that an appreciable value, how much you would increase the general importance, and the prosperity of those parts of the kingdom where such articles are to be found! But this is not the only important matter; it gives a larger quantity of iron. That is a matter which is a question of evidence, and will be made out, I believe, to your entire satisfaction. But the iron itself is of far greater value, and if it be required that a discovery should give to the world a new manufacture or substance, the iron that is produced by Mr. Crane's

Crane

invention undoubtedly has this remarkable feature of novelty, that it is far stronger, far more valuable than any other iron that has yet been made by any other process. Gentlemen, the ordinary mode of smelting iron before this time, had been sometimes by a cold blast, and sometimes by a hot blast; but anthracite has always proved so untractable a sort of fuel, that nobody had ever been able to bring it to bear on the subject, so as to be employed in any degree in the manufacture of iron. Various persons had used a hot blast to pit-coal and coke. An early improvement in the manufacture of iron, from the product of coal, was to substitute coke; and a hot blast had been applied to that with this disadvantage on the one hand, and, I believe, this advantage on the other; for certainly the manufacture was facilitated by it, but the iron itself was, undoubtedly, much worse; and I believe it will appear (it will be admitted by all persons of any experience on the subject) that the cold blast iron was very much better than the hot blast iron, until Mr. Crane discovered, that by combining anthracite in the smelting of iron as fuel, you get a maximum of advantage that had never been obtained by any other process. Gentlemen, the patent was taken out on the 28th of September, 1836. The specification was enrolled in March, 1837. Gentlemen, Mr. Crane says:—I have discovered that which was not known before; that if you will get a hot-air blast, and will make that hot-air blast come somewhere up to 600 degrees, and you will use the fuel that I point out, and in the manner which I have stated, you will produce a result such as has never been produced; and, Gentlemen, I defy any or all the persons who have had the slightest experience in the manufacture of iron, to drive Mr. Crane from this point, that what he has done never was done before; that what he has done is of the utmost value to the manufacture, which he professes to improve; that what he has done, beyond all question, has conferred upon the country, in which Mr. Crane resides, a large benefit,—it has given an impulse to the trade; given to the land a value; given to the manufacture of the country an importance that, probably, no single discovery, scarcely in any branch of arts, commerce, or manufactures, ever did before! Gentlemen, every fact that I have hitherto stated with respect to the value and importance of the discovery, its entire novelty, that the thing never was

Price et al.

done before; that if any person ever dreamt of it, as you will generally find, where an invention is carried completely into success, there will always be persons to start up to say, "Oh, dear, I thought of that before;" or there will be persons to start up and say, "Bless me, you have discovered this, and what a mighty discovery is it? it is what anybody could have done as well as you." "Well, then, why did not you do it?" I am quite certain I may rest on your good sense—on your sense of justice—that when you find something new, which is done, and when you find a result so important, so conspicuous, so distinct, so clear, and undoubted, as will be proved to your entire satisfaction, I think you cannot doubt but that the gentleman who comes forward to claim your protection to-day is entitled to your protection, if he makes out his case. Now, Gentlemen, I proceed to a few more details before I call witnesses, in order that the subject may be entirely before his Lordship and you, in all the parts of it that relate to the questions hereafter to be submitted to your judgment. Gentlemen, I beg first to call your attention and his Lordship's to the pleas. The first plea is the ordinary general issue, not guilty. Gentlemen, I understand that the defendant means to contend here to-day that he has a right to do what he has done, because he does not use all anthracite, but only a considerable part of it. He will say, I admit that I use a hot blast; I admit that I heat it to the temperature that you have described as the proper temperature; I admit that I use anthracite, or stone-coal,—and I use it largely, but I do not use it entirely; and, therefore, he says, I have not infringed upon, or violated, your patent. Gentlemen, I apprehend that is purely a question of fact for you to decide, under my Lord's direction. I am not aware that any question of law can arise upon that, beyond what may belong to every question. It is said that the law is but another name for cultivated good sense applied to the ordinary matters of life; and the result is this,—Mr. Crane has discovered that if you use anthracite, or stone-coal, in the making of iron, you will produce a far better article, and you will use that as fuel that nobody used as fuel before him; Mr. Crane has not necessarily limited himself to the entire use of stone-coal under all possible circumstances in which he may be placed; it is not part of his invention; it is not claimed as such; it is not pointed out as such; but if it

Crane v

were it would make no difference. The question is this,—Mr. Crane having discovered that you can use anthracite, the defendants, Messrs. Price and Fox, say,—Very well, you are able to use stone-coal, as you describe; we will see if we cannot use it too; and they load their furnaces with anthracite, mixing it half with coke, made from bituminous coal. Is that an infringement of Mr. Crane's process? Why, to the extent of one-half it is. What right have you to take a part or share of the benefit and say, to that extent I will take it, and will infringe your patent? Are you doing that which never was done before, except by Mr. Crane?—Undoubtedly you are. Are you doing it by Mr. Crane's method?—Undoubtedly you are. Then what right have you to do that? I admit that it is not an infringement, perhaps, of the entire patent, but *pro tanto* it is. Now, a different mode of illustrating that would be this:—Suppose a man takes out a patent for the use of a certain kind of sail, and he directs that all the sails of a vessel should be of that construction, would a man have a right to have half of the sails of that construction, and half of the ordinary construction?—I consider that a most distinct violation of the patent to that extent. If a man obtained a patent for an improved wheel, and directed that the carriage should be made with four wheels of that description, could a man take two of that construction and two of the ordinary construction, and say, I have not violated your patent at all? The truth is, to any extent that you use anthracite for the purpose of making iron with hot blast,—to any extent that you combine the two, anthracite and hot blast, to make iron, to that extent you do infringe Mr. Crane's patent, if the patent be well founded. Gentlemen, so much I understand is to be said on the other side: "Why, we do not use exclusively stone-coal." Very well, I say, then you do not exclusively violate the patent; but to the extent to which you do use anthracite, if you use it under the circumstances pointed out by Mr. Crane; if you use it with hot blast heated to that temperature to make iron similar to that Mr. Crane has been in the habit of making under his patent, you do use the invention that Mr. Crane made public by his specification, and to that extent I submit you violate his patent, and to that extent I submit you would be answerable in any damages, if it were a question of damages to-day, which it is not. So much for the first

Price et al.

plea. The third plea says, after setting out the specification, that the alleged improvement described therein was not at the time of granting the letters patent, a new manufacture invented by the plaintiff, within the intent and meaning of the statute. Gentlemen, I am not sure that I precisely know what is the object of that plea. If it be intended that any person before Mr. Crane's discovery had ever made iron by a combination of hot blast with the use of stone-coal, I say, Gentlemen, that that is an incorrect statement that cannot be supported by evidence. If it be intended to say, under a sort of special pleading, referring to the statute of monopolies, that there is no new manufacture, for that a process is not a manufacture; Gentlemen, that is a question for my Lord, and I shall only answer that sort of objection in this way. A process described in this way as producing a result, is, I take it, to be dealt with in such manner as to sustain the Royal grant and not to get rid of it; and undoubtedly the iron produced is a new manufacture, for I defy my Learned Friend to say that such iron ever was produced before. But, Gentlemen, suppose that the article produced be the same (which it is not)—suppose the invention to consist in nothing but a process, I believe that for many, many years the Courts have put that construction upon the word "manufacture." It must be a new manufacture; the Courts have held that the process is to be considered a manufacture, and if a party obtains a patent for a mere process or mode of doing something, that is as much protected as the production of an entirely new substance not hitherto known. Gentlemen, I did not read the second plea; the second plea says that Mr. Crane is not the first and true inventor. It is hardly worth while to call your attention to that, but my friend, who is with me, having pointed it out, I will not omit it. That Mr. Crane is the first inventor of this, I believe to be beyond all possibility of doubt. I presume that plea was put in, in order that we might be called on to prove it, to get some advantage which I do not yet quite understand; but I defy my friend to produce a single witness, who can cast the smallest shade of suspicion upon Mr. Crane's being entirely the original discoverer of this most important operation.

Gentlemen, I now proceed to the fourth plea. The

Crane

defendants say that the nature of the invention is not truly described in the specification. And we have with reference to that point certain notices of the objections that are intended to be raised. Now, Gentlemen, we have received, as the late statute requires, certain objections, to be delivered to us at the time of the delivery of the pleadings, and the defendant is confined to the objections so stated. I find the eighth and ninth objections are these,—"That the specification is defective, inasmuch as it does not describe the kind of furnace to which the alleged invention is applicable, and it is not applicable to all kinds of furnaces." Gentlemen, it is applicable to all the furnaces which are alluded to in the specification. It may not be applicable to all, but it is applicable to any ordinary furnace that is so constructed as to be in blast, and capable of having a hot-air blast applied to it in the manner which the witnesses will describe to you by and by.

The next objection is this,—"That the specification does not clearly state whether or not it is intended to apply to the use of anthracite, or stone-coal and culm, as the only fuel, or whether it is intended to include the use of anthracite, or stone-coal and culm, together with other fuel."

Gentlemen, that, I take it, is rather an objection which my Lord will dispose of, and I think I shall have very little difficulty in dealing with it as the forms of law require. We have pointed out what is to be done, and it is no part of our invention to state the details beyond those which are necessary to carry out the principle. The great object of the invention is, by the combination of the hot-air blast and the stone-coal, to produce an article which I have exhibited to you, and which will presently be characterized by the evidence of the witnesses. That is the great object, and there is a detail in the specification which, to those who are acquainted with the subject, will enable anybody to carry it into effect; and I shall call before you an abundance of persons professionally and practically acquainted with the subject, who will tell you that no one will have any difficulty in carrying into effect the object of the specification.

Now, Gentlemen, I pass to another, the fifth plea, on which it is a question much more, I apprehend, for his Lordship than for you. As to the points that arise on it,

Price et al.

his Lordship will forgive me if I invite his attentionfor a moment to the statement I am about to make on the points arising on that plea.

The Lord Chief Justice.—In fact, the greater part of this seems to me to be matter of law.

The Solicitor-General.—It is, my Lord.

The Lord Chief Justice.—You might almost make a case of it. The question is whether the plaintiff is first inventor. If they have any evidence to show that a hot blast was applied to anthracite before, why then, *cadit quæstio.*

The Solicitor-General.—It will terminate beyond all doubt in a question of law, my Lord. There are some facts that are material,—when the gentleman invented it, and when he got his patent, that is material, and some other things.

Sir F. Pollock.—I was about to call his Lordship's attention, and yours, Gentlemen, to the points that arise on the fifth plea. The plea states in substance this—that one James Beaumont Neilson obtained letters patent as far back as the 12th of September, 1828; the specification was enrolled on the 3d of March, 1829. The patent therefore, has a few years to run—three years, probably, at least more than two. And they set out the specification of James Beaumont Neilson, and then, after alluding to a clause in the patent, they say this,—" That the said improved application of air in the said last-mentioned letters patent mentioned and referred to, and for which the same were so granted as aforesaid, was and is the production and application of a hot-air blast, for the purpose of heating fires in forges and furnaces where bellows or other blowing apparatus were required; which said hot-air blast was long before, and at the time of the granting of the said letters patent in the said declaration mentioned, and still is, publicly used and exercised in England, by and with the license and consent of the said James Beaumont Neilson, and not otherwise, in the smelting and manufacture of iron from iron-stone mine or ore, and was and is the said hot-air blast in the said specification of the plaintiff mentioned and referred to." And the defendants further say, that the said letters patent so granted to the said James Beaumont Neilson as aforesaid, were at the time of the granting of the said letters patent in the said declaration mentioned, and still are, in full

Crane

force and effect; and the said term of fourteen years therein mentioned was at the time last aforesaid, and still is, existing and wholly undetermined; and that in consequence thereof, the plaintiff could not at the time of the granting of the said letters patent in the said declaration mentioned, or at any time since, nor can he now lawfully use the said hot-air blast in the said specification mentioned, in the smelting or manufacture of iron, without the special license and consent of the said James Beaumont Neilson for that purpose being first had and obtained." Then, Gentlemen, the replication takes issue upon this fact.

The Lord Chief Justice.—The replication sets it out.

Sir F. Pollock.—Sets out Neilson's specification?

The Lord Chief Justice.—You see the issue and the rejoinder precisely put there.

Sir F. Pollock.—And then the plea says,—"That the said using by the plaintiff of the said hot-air blast in the said specification mentioned, in the smelting and manufacture of iron from iron-stone mine or ore, as described in the said specification, combined with the said anthracite or stone-coal or culm, as therein also mentioned, was and is an using and imitating of the said invention of the said James Beaumont Neilson, for the sole use, and exercise, and benefit whereof the said letters patent were so granted to the said James Beaumont Neilson as aforesaid, contrary to the form and effect, true intent and meaning of the said proviso." And then in the rejoinder that is brought precisely to this issue,—whether it was an using and imitating of the invention of the said James Beaumont Neilson.

Now, Gentlemen, here I must entreat your indulgence, and his Lordship's, for a moment, while I enter into a question which certainly is rather more dry, I think, than what we have hitherto had, with respect to the improvement of the manufacture of iron. It is a mere question of pleading. But I apprehend that the true question raised on that plea is this,—whether it is impossible for any one to use a hot-air blast of any sort without infringing the patent of Mr. Neilson; because if there be a single mode, if there be any possible hot-air blast of any sort that is not Neilson's, then I apprehend that the issue raised upon these pleadings must be found for the plaintiff. Now, be it that Neilson had discovered one mode of

Price et al.

issuing a hot-air blast for any purpose whatever, not applying it at all events to the making of iron with stone coal. When Mr. Crane came to make his discovery, he says this: he gives to the world this as his discovery:—use a hot-air blast at a temperature of about 600 degrees of Fahrenheit. Gentlemen, that is, I believe, the temperature at which lead will melt. I suppose you are immediately aware from that, that it is a very high temperature. Neilson's patent has nothing upon earth to do with that. In a moment I will call your Lordship's attention to Neilson's specification, and to another specification that preceded it, for the purpose of shewing that there did exist before Neilson's patent a mode described of using a hot-air blast for a furnace. Undoubtedly there did exist one, and if there existed any one or more, all that Mr. Crane was called upon to do was to say this:—Now, I care not where you get, or how you get, your hot-air blast; whether you get it by license under Mr. Neilson; whether you get it by the means that were given to the public before that; or whether you get it by some other improved method not within Mr. Neilson's patent, and not within the scope of his patent; in whatever way you get it, I care nothing about it. The use of the hot-air blast is now well known. Gentlemen, I will prove to you, that a hot-air blast and the mode of producing it was just as well known as the use of a common pair of bellows for the purpose of blowing a common fire. Mr. Crane says:—I claim the hot-air blast as no part of my discovery; I merely claim the using it in combination with anthracite; I claim not that even as against any patent; but I claim only the combination. If it requires that I should have a license from Neilson to use his particular hot-air blast, I admit I must get that license; and if I can do it without Neilson's license, then I have a right to operate without that license. But I give you my discovery as I find it, and I am not bound to wait until Mr. Neilson's patent runs out, even if Mr. Neilson had a complete monopoly of all the hot-air blasts in the world.

Gentlemen, I take it (subject to any correction from his Lordship)—I take this to be quite clear. Suppose the steam-engine, merely as an instrument of power, were perfectly new, and had been the subject of a patent for some ten years, a few years remaining to run, and a person

Crane v

discovered that the steam-engine could be applied to shipping; I say, any person who made that discovery in some particular construction or form of the vessel, by arranging with respect to paddles, and so on, that application or combination would be entitled to a patent; and although in the meantime he could not use the invention or discovery without a license from the person who had invented the steam-engine, yet the moment the steam-engine became a free subject for all the world, then his patent would be in full force. But in the meantime the discoverer of the steam-engine could not apply even the steam-engine itself to this new purpose to which the discoverer had applied it by his invention and skill. This was distinctly recognised in a case. I am reluctant to refer to a case in the books in addressing a jury. There is no doubt about this: I say, that it is a question that his Lordship would have no difficulty whatever in dealing with. A patent may be taken out distinctly as an improvement on another man's patent: but we do not take out a patent to improve a hot-air blast, nor have we anything to do with hot-air blast beyond this. We have discovered that the hot-air blast used in a particular manner for a particular purpose will produce a particular result, incomparably better than has been done by the combination of any other matters to produce the same results. If we cannot use a particular form of hot-air blast without a license, undoubtedly we must get that license; but all the world is bound to know what matters are patented and what are not. If you wish to use something for which Neilson has got a patent, you will go to him for a license. If there be any other hot-air blast which you may resort to, you may use that without Neilson's license; therefore the real practical question is this,—Has Mr. Neilson a patent which actually excludes anybody, under any circumstances, from using every description of hot-air blast at a high temperature or a low temperature? Has Mr. Neilson got the entire command of every description of hot-air blast, from the highest to the lowest temperature, and under every form, shape, and circumstance under which a hot-air blast can be used? Gentlemen, when it comes to be examined it will turn out that Mr. Neilson has no such patent.

Now, I beg to state, in the first place, that before

Price et al.

Neilson obtained any patent for a hot-air blast, a person of the name of Botfield had discovered that hot air might be used, and had pointed out a method of using it. Gentlemen, I have here the specification of a patent granted to Botfield on the 2d January, 1828, Neilson's patent having been granted on the 11th September, 1828, and therefore Botfield's invention anticipated Mr. Neilson's by a period very nearly of twelve months. Mr. Botfield takes out a patent for "Certain improvements in making iron, or in the method or methods of smelting and making of iron."* And he says,

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—

"Now know ye, that in compliance with, and agreeable to, the true intent and meaning of the said proviso in the said letters patent contained, I, the said Thomas Botfield, do hereby declare that the following is a particular description of the nature of my said invention, and methods and improvements in the smelting and making of iron, both in respect to principle, and the way and manner in which the same may be performed, that is to say, the principle is for causing or obtaining a blast of atmospheric air sufficient to smelt, fuse, run, or make pig, cast, or crude-iron, from ironstone or ore. This blast is to be produced by means of rarefied air-gas flame, or heated air from an oven or fire-place, and is to be applied in or to a blast-furnace cupola or air-furnace. This I propose to effect by the draft of a powerful chimney or chimneys, which may be built separate at any distance that may be most convenient, or may join to, or be made part of, the blast-furnace or cupola, as may be found most desirable and best to answer the purpose required, and which is to be connected by a flue or flues with the cupola blast or air-furnace; but in case this draft should not prove sufficient for the purpose of smelting the ironstone or ore, I propose and intend to apply and use the common blast from machinery to assist the blast from the draft of the chimney; this is to be used at the same or any other twyer. And I claim a right and mean to use the atmospheric air either separate or mixed with gas flame or heated air. I also claim as part of my patent the right to use and mix (with the other materials) rock-salt, common refuse, or other salt, in any state or degree of refining, or any other substance of which soda (the mineral alkali) forms a part. This is to be mixed in the blast-furnace cupola or air-furnace with the ironstone or ore, and with the other usual materials of coke or charcoal and limestone, to which cinder produced in the process of converting pig, cast, or crude-iron into malleable-iron, may be added. And I propose to mix the salt or other substance containing soda in such proportions as I shall find necessary to cause the ironstone or ore to melt or fuse sooner, or with less blast fuel or heat.

"Now I do hereby declare, that the before-mentioned principles comprehend the real object of my patent, and in order for the better understanding the method or methods in which the aforesaid may be reduced and applied to practical use, I wish it to be understood, that although I may vary the mode, way, and manner by a variation of

Crane

after describing his apparatus, that there is a fire, and that there is a quantity of air that passes near that fire for the purpose of being heated. And he claims to use a blast furnace for the purpose of propelling that heated air into the furnace for the purpose of smelting the iron. So that it is quite clear that long before Neilson took out any patent, Mr. Botfield had discovered one mode of using a blast furnace with heated air, so as to bear upon the materials in the furnace, namely, the mixture of the fuel and the ironstone or ore.

Then, Gentlemen, comes Neilson's Patent, for an "Improved application of air to produce heat in fires,

---

applications to produce the said effects, and maintain the main purpose intended, as circumstances may require; yet I principally propose to adhere to the method or methods herein described, which may be understood from the annexed drawing and description thereof. In the annexed drawing, A, represents the chimney; B, the blast-furnace; C, the oven air-furnace or fire-place; D, D, flues to connect the furnace with the chimney; E, space open to admit the atmospheric air to the twyer, which may also be introduced below or on the sides, as well as above the twyer, or may be introduced at all these places as circumstances may require. F, F, dampers to stop or regulate the draft of the flues to the chimney. G, cover for the top of the furnace to be opened when the materials are being put in to charge the furnace.

"And I do hereby declare, that the blast-furnace air-furnace cupola, and oven with the chimney or chimneys may be built, erected, or made of any height, shape, form, or size, that shall be found most suitable to the materials to be used or smelted, and be connected by flues in any way; and may be constructed of any material or materials, which may be found best suited for the purpose.

"And I further declare, that I propose to use coal, coke, stone-coal, culm, wood, charcoal, or any other kind of fuel or fuels, or combination of fuel in any proportion or proportions in the fire-place, oven, or air-furnace, for producing the gas-flame or heated air. And also to use all the materials before-recited in any proportion or proportions that may be found sufficient and best adapted to produce the main object required.

"I claim as my patent the use of the additional chimney or chimneys, and the application of rarefied air-gas flame or heated air to, at, or near the twire or twires of the blast-furnace or cupola, to cause or assist the blast of atmospheric air.

"And I also claim as part of my patent the use of salt, or any other substance containing soda, to mix with the iron-stone or ore, and other materials in the blast cupola or air-furnace; to cause those materials to melt or fuse sooner, more easy, or with less blast and fuel.

"But I do not claim as my patent the use of salt in any part of the process of making bar-wrought or manufactured iron from pig, cast, or crude-iron; but only claim the use of salt or any other substance containing soda, in making pig, cast, or crude-iron from ironstone or ore. —In witness whereof, &c.

"THOMAS BOTFIELD."

Price et al.

forges, and furnaces, where bellows or other blowing apparatus are required.* You observe, that what Neilson speaks of is a large vessel, which is to be kept heated, and into which you are to pour or drive the air, and then it is to be heated there and to pass out into the furnace; and he gives you dimensions for an ordinary smith's forge,—1,200 cubic inches would be required. It will give you some notion of the size, when you are told that an ordinary imperial pint is somewhere

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—

"Now know ye, that in compliance with the said proviso, I, the said James Beaumont Neilson, do hereby declare, that the nature of my said invention for the improved application of air to produce heat in fires, forges, and furnaces where bellows or other blowing apparatus are required; and the manner in which the same is to be performed, is particularly described and ascertained as follows, that is to say,—

"A blast or current of air must be produced by bellows or other blowing apparatus in the ordinary way; to which mode of producing the blast or current of air this patent is not intended to extend. The blast or current of air so produced is to be passed from the bellows or blowing apparatus into an air-vessel or receptacle, made sufficiently strong to endure the blast, and through and from that vessel or receptacle by means of a tube, pipe, or aperture into the fire, forge, or furnace. The air-vessel or receptacle must be air-tight or nearly so, except the apertures for the admission and emission of the air; and at the commencement, and during the continuance of the blast, it must be kept artificially heated to a considerable temperature.

"It is better that the temperature be kept to a red heat, or nearly so, but so high a temperature is not absolutely necessary to produce a beneficial effect. The air-vessel or receptacle may be conveniently made of iron, but as the effect does not depend upon the nature of the material, other metals or convenient materials may be used. The size of the air-vessel must depend upon the blast and on the heat necessary to be produced. For an ordinary smith's fire or forge, an air-vessel or receptacle capable of containing 1,200 cubic inches will be of proper dimensions; and for a cupola of the usual size for cast-iron founders, an air-vessel capable of containing 10,000 cubic inches will be of a proper size. For fires, forges, or furnaces upon a greater scale, such as blast-furnaces for smelting iron, and large cast-iron founders, cupolas air-vessels of proportionably increased dimensions and numbers are to be employed. The form or shape of the vessel or receptacle is immaterial to the effect, and may be adapted to the local circumstances or situation. The air-vessel may generally be conveniently heated by a fire distinct from the fire to be affected by the blast or current of air; and generally it will be better that the air-vessel and the fire by which it is heated should be inclosed in brick-work or masonry, through which the pipes or tubes connected with the air-vessel should pass. The manner of applying the heat to the air-vessel is, however, immaterial to the effect, if it be kept at a proper temperature.—In witness whereof, &c.

"JAMES B. NEILSON."

Crane v.

about thirty inches; that is, about 400 pints: dividing 1,200 cubic inches by thirty, or ten inches by twelve, ten inches one way and twelve the other, will give you a notion of it. If you get a larger one, it says 10,000 cubic inches will be the proper size; that of course would be ten times as large as that. Gentlemen, that is Neilson's invention, if you are to call that an invention after what Mr. Botfield had done before. But Mr. Neilson surely does not mean to say, that there is no other mode of dealing with a blast furnace and with heated air, but what will come within the scope of what is here described. Why, it says, "the air vessel may generally be conveniently heated by a fire distinct from the fire to be effected by the blast or current of air, and generally it will be better that the air vessel and the fire by which it is heated should be inclosed in brickwork or masonry, through which the pipes or tubes connected with the air vessel should pass." The manner of applying the heat to the air vessel is, however, immaterial to the effect, if it be kept at a proper temperature. I do not find what that temperature is, nor do I find any description of the apparatus. Mr. Neilson gives no plan, no plate, no dimensions, nothing but this description I have read to you; and, in point of fact, all the apparatus that Mr. Neilson ever put up corresponded with that description, in having a large air vessel, as he describes, increasing in dimensions, according to the size of the furnace upon which it was to operate. Gentlemen, in reality many constructions were in use, in very general use throughout many parts of the kingdom, both in Scotland and in other places, and this is one of the modes (referring to a model), and this is the best. There is no air vessel at all; the air is made to pass through these tubes; it is heated and passes through them, and it comes out at the extremity at a temperature which Neilson's plan, or anything which he has suggested, could never produce. There is no possibility, by anything that Neilson has described, of getting the air to a temperature of 600. If Neilson be put into the box, or anybody who has ever worked under Neilson, I defy any person to say that by an apparatus constructed under Neilson's directions, or upon Neilson's plan—I defy any person to say that you ever get to a temperature of 600. A temperature of 600 is necessary, it is essential to the success of Mr. Crane's operation; it cannot be obtained

Price et al.

without it—I mean without something near to that: you may fall short of the 600 by 20, 30, or 40, or something of that kind; but it is preferable, he says, to keep it up precisely to that temperature. This is the sort of apparatus which is in use universally in many parts of Scotland, in many parts of Yorkshire I believe, and Staffordshire, and this, undoubtedly, Mr. Neilson does not in the least degree aim at. I submit, therefore, whether you take the substance of that issue (my Lord, as a matter of law, will tell you what it means), or whether you take the fact as I believe it will be presented to your senses, and made out in evidence, that which is done or proposed to be done is not that which Neilson desires to be done; but if this were within Neilson's patent, unless there be no mode of using any possible hot-air blast except that which Neilson may claim as his, Gentlemen, I apprehend this issue cannot be maintained on behalf of the defendants. It is, after all, Gentlemen, not very important; I am sorry that we are here trying it; certainly we could not very well avoid it, because we believe the fact to be as we state it; but if the issue is found one way or other I do not believe it will have any influence on the ultimate judgment of the Court, because whether that which we allude to is already the subject of another patent, or is common to all the world, that does not in the slightest degree interfere with the right to apply the patented invention to a purpose entirely new. If you require to have a license from Neilson for the purpose of using it, you are to get that license. It has been certainly decided, and I apprehend it is undoubtedly the law, that you are not bound to do more than to give to the world your invention. Your invention may be an improvement of that which is already the subject of a patent, or it may involve the use of something which is already the subject of a patent; still, whether that be so or not, while your monopoly, granted by the Crown for the protection of industry and as the reward of genius exists, no one has a right to interfere with that; no one can plough with your heifer, no one unless he has your permission can do so, and we charge the defendant that he has interfered to that extent with our invention.

Now, Gentlemen, I am obliged to my Learned Friend Mr. Richards, for suggesting an illustration very familiar, but which seems to me to be very pertinent. What

Crane

Neilson proposes to do, beyond all doubt, is to allow air to pass through some large space that is kept in a state of exalted temperature. He tells you to increase your vessel in proportion to the size of your furnace. He gives you no figures, he gives you no details, he does not tell you beyond that that you are to enlarge your vessel in proportion to the furnace. As my friend was suggesting to me, as good an illustration as we can give of Neilson's discovery is this:—Force your air into an oven, and heat that oven by surrounding it with fuel, and then let the air pass out at the other side. Subsequently it was found that it was advantageous to check the air a little, and some divisions were put up, so as to make it pass up and down, and up again.

Now all this was after Neilson's patent and specification were before the public; and until some person discovered that by sending the air merely through these tubes exposed to heat and without any air vessel at all, until that was brought to something like perfection by the experience, and the sagacity, and the perseverance, and the industry of others, the hot-air blast that Mr. Neilson gave to the world, and as he practised it for years after the patent was given to the public—that hot-air blast never would have answered the purpose of Mr. Crane. I say again, if Mr. Neilson is here, or anybody who ever acted under Mr. Neilson, or ever had erected any hot-air blast under Mr. Neilson's superintendence, or anybody in connexion with him, be put into the box to-day, that man must confess that never did he under Mr. Neilson's plan ever raise the temperature to more than 200 or 300; as to raising it to 600 was perfectly out of the question, it was impossible, the thing could not be done.

Now, Gentlemen, I am aware of a fact stated in the plea. They say, Ay, but you, Mr. Crane, have taken a license from Mr. Neilson. Gentlemen, that has nothing to do with the issue, as his Lordship will tell you, but it is a fact perfectly true. Mr. Crane did take a license under Neilson to act with his patent, and the reason for doing that is perfectly plain. Mr. Crane's invention was of infinite importance—I believe in point of value and importance, as I have said, there has been no invention of modern times that can compare with it in the benefits that it has conferred upon all that part of the country.

Price et al.

Mr. Crane was desirous by every possible means to carry it on to the utmost perfection, and having occasion to see what improvements had been made upon hot-air blast, which, after all, was no part of his invention, he never could tell but that many of the experiments he was making might be considered as falling within Neilson's patent, and therefore it was very much better for him to pay the very small sum, which he undoubtedly did, rather than to go to law with Mr. Neilson, and involve himself in litigation at the earliest moment when his patent came before the public. In order to entitle himself to use a hot-air blast of any sort, he had undoubtedly a license from Mr. Neilson, but that will not change the character of Mr. Neilson's patent, nor destroy the fact. The question is this, whether the plan, the very possible plan alluded to and suggested by Mr. Crane, is within the scope and compass of Mr. Neilson's invention? Gentlemen, I deny that to be the case, and I think, Gentlemen, when you come to see all that has been done, whether under Mr. Neilson or since Mr. Crane's invention was known to the world, you will be of the same opinion. I regret that we should be involved in a discussion which, after all, is of very small importance. Whether it was, or was not, it was the opinion of my Learned Friend, whose assistance I have, that we had better traverse the fact, believing it (as we did) not to be true, than demur to the plea in point of law, where we thought we had a clear ground to ask for the judgment of the Court. I believe this issue to be comparatively of no sort of importance, but still as regards trying the fact, I maintain that Mr. Crane is entitled to your verdict on that issue. For he does not use, he does not suggest the use exclusively of Mr. Neilson's invention, but he refers to any mode, and there were plenty of modes known of obtaining a hot-air blast. His patent is not for a hot-air blast, it is not for a mode of getting it, it is not for a mode of raising it to a temperature of 600, but he says,—Get that hot-air blast in any way in which you can obtain it, whether by the new mode, or the old mode, or made under the license, or without the license, but get it, and when you have got it apply it to the making of iron with the assistance of stone-coal, and you will produce that superior article for which I claim taking out a patent, which is valid in point of law. Gentlemen, I have adverted to all the points

Crane

that are likely to arise in this cause. I do not in the slightest degree regret that his Lordship thinks it may not occupy so much of your time and attention in the points of facts, inasmuch as a great deal of law may be considered to be involved in it. I have thought it right to make this statement; by and by I shall produce evidence to bear out the whole of that statement; by and by we shall hear what my Friend's case is on the other side; as to which I must only state that I do not know precisely, nay, that I do not know even in a general way—although we have been in the Court of Chancery, and have had all the benefits that arose from the discussion which took place there: I have got piles and heaps of affidavits, and my attention was called to them—and I must say still, that I have not collected from those affidavits with that sort of distinctness what my Friend's case is, sufficient to induce me to anticipate or to say anything about it. Therefore it is better that my Friend should state his own case. When he does so he will support it with some sort of evidence; if so, I shall have an opportunity of addressing you again. I hope that will be as early as possible, but I am afraid it will hardly be in the course of the present day. Witnesses will be called before you on the part of the plaintiff; I am afraid they must take up some considerable time. There is a good deal of detail through which we must necessarily wade, and I entreat your patience and indulgence; and I am sure you will be quite ready, at the close of the case, to do nothing but what is just between the parties who are before you to-day.

Mr. Richards then put in the Specification of the plaintiff's patent,* and of Botfield's and Neilson's

---

* The specification was as follows:—

"To all to whom these presents shall come, &c., &c.—

"Now know ye, that in compliance with the said proviso, I, the said George Crane, do hereby declare the nature of my invention, and the manner in which the same is to be performed, are fully described and ascertained, in and by the following statement thereof (that is to say):—

"According to the ordinary practice of obtaining iron from ironstone, mine, or ore, in this country, the iron-stone, mine, or ore, either calcined or in the raw state, according to its respective qualities, is put into suitable furnaces, with coke produced from bituminous coal, formerly called pit-coal in contradistinction to charcoal produced from wood, which was the fuel employed in this country previous to the introduction of pit-coal, in the smelting and manufacture of iron. Now as there are districts in which are to be found large quantities of iron-

Price et al.

patents, and also of Devaux's patent* for "Certain improvements in smelting ironstone or iron ore," dated the 8th day of October, 1835.

stone, mine, or ore, in the immediate neighbourhood of what is known as stone-coal or anthracite-coal, it has long been considered as a desirable object to employ such coal for the smelting and manufacture of iron, and although attempts have been made to apply such description of coal in the smelting and manufacture of iron, the same have failed and have been abandoned. In addition to such advantages to be obtained from the using of anthracite or stone-coal in the districts where such coal is found together with ironstone, mine, or ore, from the practice I have had, I am induced to believe such coal from its properties, will be found to produce a quality of iron more nearly resembling iron obtained by the aid of vegetable charcoal. Now the object of my invention, is the application of such anthracite or stone-coal, combined with a hot-air blast, in the smelting or manufacture of iron from ironstone, mine, or ore. And in order to give the best information in my power for enabling a workman to carry out my invention, I will describe the process or means pursued by me, and in doing so, I will suppose the furnace of an ordinary construction to be in blast, and that the machinery and apparatus are adapted for the application of hot-air blast, as is well understood and extensively applied in many places where the ordinary fuel (coke of bituminous-coal, or the coal in a raw state) is employed in the manufacture of iron from ironstone, mine, or ore, and I have found that a furnace having suitable apparatus for heating the blast to about 600 degrees of Fahrenheit, a good arrangement for carrying out my invention, though so high a degree of temperature is not indispensably necessary, but I believe preferable. In charging such a furnace, I throw in about three hundred weight of anthracite or stone-coal or culm to each five hundred weight of calcined argillaceous iron-stone, with a proper quantity of flux, as if working with the coke of bituminous-coal, such charging of the furnace and the general working, with the exception of the using of anthracite or stone-coal, is to be pursued as if working with coke of bituminous coal, and I would remark that the quantities above given are such as I have hitherto employed in making the best qualities of pig-iron, videlicet, No. 1, or No. 2, at my works, from the anthracite, stone-coal, or culm, found in the neighbourhood of the Yniscedwyn Iron Works, but those quantities may be varied according to local circumstances, and the refractory nature of the ironstone, mine, or ore, or otherwise, to be reduced, and the quality of iron desired to be obtained, as is the case in ordinary working, and at the judgment and discretion of the manager as heretofore. And I would remark that the anthracite, or stone-coal, or culm, may be coked in like manner to bituminous-coal before charging the furnace, but from my experience I have not (so far as my practice goes in working with the coal obtained in my neighbourhood) found that such coking is necessary, or that a more advantageous result is obtained than in applying the anthracite or stone-coal directly from the mine. And it is desirable to observe, I have found it of advantage that the blast of hot-air should be as free and unimpeded as possible, and from that account I have hitherto used only anthracite or stone-coal, the smaller parts of which would not pass through a sieve of an inch mesh, but where the pillar or volume of blast

Crane v.

John Morgan, sworn.—Examined by Mr. Richards.—I am agent to Mr. Crane. I remember in May, 1838,

is considerable, say two pounds and upwards on the square inch, this precaution is not necessary.

" Having thus described the nature of my invention, and the manner of carrying the same into effect, I would have it understood that I do not claim the using of a hot-air blast separately, in the smelting and manufacture of iron as of my invention, when uncombined with the application of anthracite or stone-coal and culm; nor do I claim the application of anthracite or stone-coal in the manufacture or smelting of iron, when uncombined with the using of hot-air blast. But what I do claim as my invention, is the application of anthracite or stone-coal and culm, combined with the using of hot-air blast in the smelting and manufacture of iron, from iron-stone, mine, or ore, as above described.—In witness whereof, &c.

" GEORGE CRANE."

---

* Mr. Devaux's specification was as follows:—

" To all to whom these presents shall come, &c., &c.—

" Now know ye, that in compliance with the said proviso, I, the said Charles Pierre Devaux, do hereby declare the nature of the said invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following description thereof, reference being had to the drawing hereunto annexed, and to the figures and letters marked thereon; that is to say,—

" The improvements relate to the placing or arranging of certain apparatus between the ordinary blowing machine, and the furnace which contains the iron-stone or iron-ore to be smelted, whereby the blast of atmospheric air, caused by the ordinary blowing machinery, is forced through and amongst the fuel in a fire inclosed in such superadded apparatus; and whereby the atmospheric air so forced supports combustion in such fire, becomes heated, and in some degree decomposed, and is thence constantly forced forward by the pressure of condensed air in the apparatus (carrying with it the gas and vapours evolved by the fuel in the fire,) into and becomes a heated and gaseous blast to the ordinary furnace, containing the iron-stone or stone-ore to be smelted, great improvement will take place in the process of smelting iron-stone or iron-ore, and fuel saved. In order that the invention may be more fully understood, I will first describe the arrrangement of apparatus constructed according to the invention as communicated to me from abroad; I will then point out those parts of the apparatus, the peculiar arrangement of which constitutes the improvements claimed under the present letters patent.

" *Description of the Drawing.*

" Fig. 1, represents a longitudinal section of the apparatus constructed according to the invention for supplying a constant blast of heated and partly decomposed atmospheric air, gas, and vapours, to the ordinary furnace containing the iron-stone or iron-ore.

" Fig. 2, is a plan (also in section) of the apparatus.

" In each of these figures the same letters indicate the same parts. The apparatus I prefer to be arranged as follows: The chambers, A, B, C,

Price et al.

being sent to Mr. Price's works at Neath Abbey. I saw the fillers using the anthracite in quantities of from about

are formed of plates of iron connected by screw bolts or otherwise, the joints being properly stopped and perfectly secured with ordinary iron cement, in order not to leave any opening for the escape of the condensed air which they are to contain. The chamber, A, is sufficiently large to admit a man into it in order to feed and examine the state of the fire as hereafter described. B, is another chamber into which the man first enters; and C, is the chamber, in the upper part of which a furnace or fire-place is constructed. D, E, are pipes to convey the heated and partly decomposed atmospheric air, gas, and vapours from the fire-place or furnace so constructed in C, through the twyer-pipe to the furnace containing the iron-stone or iron-ore. The lower part of the chamber, C, forms the ash-pit, M, which is open to the chamber, A, so as to permit the free passage of air. The chamber, A, communicates with the chamber, B, by an opening sufficiently large to allow of a man to pass from one to the other. The chamber, B, communicates with the atmosphere by a similar opening. These openings are covered by doors, P, P^1, which are made of plates of iron, and their edges are faced with leather or other material to close the same air-tight. These doors can be easily opened when the pressure is not greater than that on the outside, as they turn upon iron pivots or hinges, and open inwards. In these doors are openings, A, A, which are covered with a plate disc of metal, which can be turned from the outside or inside; and the openings and plates being so formed and arranged, that in turning the plates the openings are uncovered, and passage left for the air in A, to pass into B, to equalize the pressure on the two sides of the door, P; or the air in B, to pass into the outer atmosphere; and to equalize the pressure on the two sides of the door, P, as is more fully described hereafter, in order that the doors, P, P^1, may be opened. On the upper part of the chamber, A, is a valve, L, opening inwards. In the chamber, C, are placed the fire-bars, F. The sides and part of the top of the chamber, C, above the fire-bars are cased with the fire-bricks, which are separated from the plates of iron of which the chamber is formed, by several inches of sand, or ashes, or any other bad conductor of heat. The conduit pipes, D and E, are formed of iron, and lined with brick-stone or other material suitable to bear a high temperature; the pipe, E, may be made to move backward or forward when required by means of a wheel and collar, as shown in the drawing, the ends being formed so as to fit close by the ends of the pipes in which they are inserted when at work. The fire-place, C, has an opening, G, to feed the fire with fuel, and to clean the fire-place when requisite. This opening, G, is shut and opened by means of a small valve, as shown by the drawing. The chamber, A, communicates with a blowing machine of any of the known constructions, by the pipe, K. This communication between the chamber, A, and blowing machine may be at any part of that chamber, as local circumstances may make convenient. In the drawing this communication is shown at one side of the chamber, A, at K. From the foregoing description, aided by an examination of the drawing, the construction of the apparatus will readily be understood.

"I will now proceed to describe the manner of working the same.

Crane

five hundred weight, mixed with about nine hundred weight of coke made from bituminous coal. The quantity

A fire being lighted at F, the door, P, and the valve, L, being shut, the atmospheric air from the blowing machine comes in through the opening, K; it fills the chamber, A, and presses against the door, P, of that chamber, as also on the valve, L, and thereby keeps the same closed by the pressure of the condensed air. The air forced into the chamber, A, in filling that chamber, and also the ash-pit, M, presses up through the fire at F, and supports combustion, it is pressed forward, carrying with it the gas and vapours evolved by the fuel. These partly decomposed air, gas, and vapours are forced into the smelting furnace, where they operate more effectually in smelting the iron-stone or iron-ore, and produce great economy in the process.

"I will now explain how the feeding the fire with fuel is performed in the midst of the compressed air in the chamber, A. The man having entered into the chamber, B, and the door, P, to that chamber, and also the opening, A, in that door being shut, it is necessary to turn the handle of the opening, A, in the door, P, to establish a communication between A and B. This being done, the compressed air from A, enters into the chamber, B, and causes an equal pressure in both chambers; and the weight which presses against the door, P, being equal on both sides, it may readily be opened, and permit the workman to enter into the chamber, A, and clean out the grate, and feed the fire at the opening, G, with nearly the same facility as if it were free from the compressed air. If the blowing machine should stop whilst the man is in the chamber, A, and there should be any partly decomposed air or gas therein, which would be injurious to the workman if ventilation of fresh air was not immediately accomplished, the valve, L, not being pressed on by a continuance of compressed air, would open and admit of the escape of the impure air, and thus prevent the workman from running any risk of being injured. I would also remark, that the fuel to be used in the fire-place, F, is pit-coal, coke, charcoal, or a combination of these, or other well-known materials.

"It should be understood that I am aware, that furnaces for smelting iron-stone or iron-ore have been before worked by means of a blast or currents of heated atmospheric air; and a patent was obtained by James Beaumont Neilson on or about the 11th day of September, 1828, for an apparatus for heating atmospheric air in its progress from the blowing machine to the furnace containing the iron-ore or iron-stone; but in such apparatus the atmospheric air did not pass into and amongst the burning fuel contained in a closed fire-place, similar to that described in this specification; but such atmospheric air was heated by its being driven or forced through vessels heated from without, the vapours and gas evolved by the fire by which such vessel is heated, not passing into the furnace containing the iron-ore or iron-stone; and there was also another patent obtained by Thomas Botfield, on or about the 2d day of January, 1828, in the specification of which it was proposed to draw atmospheric air through a fire, and thence into and through the furnace which contained the iron-stone or iron-ore, but in this last-mentioned patent it was essential to have a high chimney with flues from the smelting furnace thereto, in order to obtain a draft to the furnace; but by the invention secured by the present letters patent, no

Price et al.

of ironstone or mine was about fourteen hundred weight to a charge: they were using hot blast. In Mr. Crane's No. 1 furnace, stone-coal and coke are used in about equal parts. In No. 2 furnace all stone-coal is used. No. 3 furnace is now at work with all stone-coal. Mr. Crane uses the hot blast; it is sufficiently hot to melt lead. The iron made by Mr. Crane is better than either that made by cold or hot blast by the old means.

Cross-examined by Mr. Solicitor-General.—I went to Neath Abbey works alone. The mode of charging the furnace is by so many barrows of one sort of thing and so many barrows of another. I made a memorandum of how many barrows of each was put in; there was one barrow of stone coal to three of coke. I saw the operation several times; the quantities were always the same. Stone coal or anthracite can be obtained close to Mr. Crane's works; there is more there than could be used in a thousand years.

John Buckland sworn—Examined by Mr. Smith.—I am master moulder at the Yniscedwyn iron works, and have been for the last thirty years. The works are situated on what is called the anthracite or stone coal forma-

---

additional chimney is required to produce a draft. And also, the said Thomas Botfield in some instances proposed in his specification to use common blowing machinery in aid of the draft produced by a chimney, but in such cases the air is forced by the blowing machinery directly into the furnace containing the iron stone or iron ore, and is not first forced into a chamber, A, similar to that herein described, nor does the compressed air feed and support the combustion of a fire in a close fire-place, such as is herein fully described; I would therefore wish it to be understood that I do not claim as new the application of heated air combined with gas or vapours evolved by a fire, unless the operation be performed by an apparatus constructed by forcing air through the fire which heats it. But I do hereby claim the constructing and using an apparatus of a like nature as that above described between the blowing machine and the furnace containing the iron-ore or iron-stone to be smelted in such manner that the blast proceeding from the blowing machine shall pass into and amongst the ignited fuel, and support combustion in a closed fire-place, and from thence the heated and partly decomposed air from therein by the pressure of the continued working of the blowing machine urged onwards (carrying with it the gas and vapours evolved by the ignited fuel) into the furnace containing the iron-ore or iron-stone, by which means much saving in fuel, in addition to other advantages, will be obtained in the process of smelting iron or iron stone, such apparatus being so arranged as to admit of a man managing the fire during the time that condensed air is being forced through the fire-place as above described. In witness, &c.

"C. P. Devaux."

Crane v.

tion. They extend to Pembroke, which is about sixty or seventy miles. I have known several attempts before Mr. Crane's patent to use anthracite coal, but they have all been failures. Mr. Crane's No. 2 furnace is called a cupola furnace; it was first put to work with the hot blast in February, 1837. There was a little coke put in the furnace to begin, but afterwards nothing but anthracite was used, and has been burnt ever since without any other coal. The blast lasted two years and four months and was then blown out, and after putting in a new hearth it was put in blast again—it was out of blast about five weeks. The temperature of the blast is about 600 deg. of Fahrenheit. Before 1837 No. 2 furnace was worked with bituminous coal. The iron produced by the use of the anthracite is much stronger than that made by the common coal. The yield of the furnace has increased since the introduction of the anthracite, and the quantity of fuel required is less.

Cross-examined by Mr. Sergeant Bompas.—One of the attempts to use anthracite coal was made at Abbercrane, in 1827, by Mr. Crane. I saw it three or four times. There was only one twyer to the furnace at which the experiment was tried. The stone coal was most of it thrown on to the twyer. A shovel-full was thrown on every charge, that is, once in forty-eight hours. That shovel-full jobbed the twyer, and it was obliged to be drawn off.

The Lord Chief Justice—What is the subject of this cross-examination? I do not exactly see it, because at the most it is only an attempt made in 1827, in which they did not exactly succeed. There is no doubt the thing is done. Your defence is, that it is not new.

Re-examined by Sir F. Pollock.—The attempt which I spoke of as having been tried before Mr. Crane's patent, to use anthracite coal, was not done with hot blast. I never knew hot blast used with anthracite before Mr. Crane's patent.

Rees Davis.—Examined by Sir F. Pollock.—I have been furnace-manager to Mr. Crane for three years. The hot blast apparatus was erected before I went to him. The furnaces are charged under my direction. When I first went to the works coke was used in No. 2 furnace, but shortly after we began to put stone coal in, and I think about the 7th February we put in all stone coal,

Price et al.

and it continued so two years and a-half. The iron produced by the stone coal is stronger, and there is an increase in the quantity. In the furnace No. 2 we got thirty or thirty-two tons per week on the average, and before that we only got twenty-two or twenty-three tons. I was in the employment of the British Iron Company at Abbercarne in 1826 and 1827; I had been on the same works since 1820; they used the cold blast. Mr. Harper built a small furnace to try an experiment with the stone coal; he tried three furnaces, the two last furnaces were larger than the first; the first succeeded, but the larger ones failed—it was merely an experiment. The cold blast only was used.

Cross-examined by *Mr. Sergeant Bompas.*—The large furnace of the British Iron Company was in work altogether about a month or five weeks, and then the hearth was cleared out and repaired and again put into operation. It continued at work as long as I remained there, which was about ten or eleven months, but not in the same way as before. Sometimes it was blown in with all coke, and then some stone coal was put in, and then they left off, perhaps a fortnight; they again applied more and more stone coal, and again discontinued it for a week or a fortnight, but never in any instance did they use all stone coal. In Mr. Crane's No. 2 furnace nothing has been used but stone coal for two years and a-half. No. 3 furnace was put to work about two years ago. No. 1 has been in work about a year and a-half. We began with coke to blow them in: we tried them with all stone coal, but we did not find it answer so well in the larger furnace; we tried six parts of stone coal to one of coke. We have since used half stone coal and half coke, and afterwards two of stone coal to three of coke. The quantity of stone coal has been increased, and the last day we came here it was all stone coal.

Re-examined by *Sir F. Pollock.*—The last time any furnace was in blast at Abbercarne was in 1827; there never was more than one furnace in blast there except the small experimental one. I never saw hot blast or heard it talked of at that time. In Mr. Crane's No. 2 furnace nothing but stone coal has been used for upwards of two years and three months. Mr. Crane had not enough stone coal for all the three furnaces.

David Mushett—Examined by *Mr. Richards.*—I have

Crane

been acquainted with the iron districts in this country for the last forty years, and the different modes of manufacturing iron. I was Managing Director to the British Iron Company in 1826: I was at their works at Abbercarne in that year; they were at that time endeavouring to use as much stone coal as could be done with propriety. I think they were using about three-eighths of stone coal to five-eighths of bituminous coal, and at another time nearly equal proportions. Hot blast was not at any time used. The quality of iron produced was forge iron—I should think decidedly inferior for casting purposes. The quantity was moderate. The first four months of the blast they were making two hundred tons of pig iron or castings, which was at the rate of twelve tons per week, and I think the last four months of the blast they made at the rate, upon an average, of twenty-two and twenty-four tons per week, which in these days I consider a very small quantity; it would never pay, because the common charges upon that sort of iron are very high indeed. The iron was not, in my opinion, marketable for any but forge purposes. I think the cost of manufacture for the last four months of the blast was about 6*l.* per ton, and the previous four months about 8*l.* per ton. It never realized 4*l.* per ton. I had great difficulty in finding a customer for it. The only customer I ever met with was the Neath Abbey Company. Mr. Price objected to purchase it on account of its being of so bad a quality. The Abbercarne works were abandoned by my advice about a month after I had them. There was a sleeping rent of 400*l.* per year, which I recommended the Company to pay rather than continue the works. The anthracite is of an intractable nature, and the difficulty of working has been long known in the trade. I never knew before Mr. Crane's patent, of the hot blast being used with anthracite. I have been all my life engaged on the subject of iron. Since Mr. Crane's patent I know of two new works having been established in the stone coal districts, and I have heard of several others. I have tried the strength of Mr. Crane's iron by the experiments that were published by the late Mr. Tredgold, and I followed the same plan as he did, which was, by having a bar of a given length stuck into a wall or building, and a weight suspended to the end so as to give the same degree of pressure throughout. The bar was about one and a-half inches broad by

Price et al.

three-quarters thick. I find, upon an average of Mr. Tredgold's experiments, that the breaking weight of iron of the old manufacture of these dimensions, and tried in that manner, would be 173 lbs., but I found the breaking weight of Mr. Crane's No. 2 furnace, in which all stone coal was used, to be 209½ lbs. The No. 3 furnace, in which two-thirds stone coal was used, 199 lbs., and in No. 1, where only one-third stone coal was used, 180 lbs.

Francis Northall, sworn—Examined by Mr. M. Smith.—I am Furnace Manager to Mr. Crane. I was engaged at the Abbercarne works in 1826. While I was there, there was only one furnace in blast. The fuel we used was partly coke and partly stone coal—the greater part was coke. The only blast we used was cold blast. We tried it from April to February, but it was a total failure. If we had then known what we do now we could have mastered it. We wanted the hot blast. When I left Abbercarne I blew out the furnace, and so it has continued ever since. The iron we made cost very near 6*l.* per ton; the Company lost 2*l.* a ton by it. During the time I have been with Mr. Crane I have attended regularly every day; his process is quite successful; the quality of the iron is excellent. There is no such iron made in this kingdom as the anthracite coal iron made at Yniscedwyn.

Cross-examined by Mr. Rotch.—There was great difficulty in getting the cold blast through the furnace at Abbercrane when it was charged with anthracite, and when we could, the iron was very middling; where there was one or two tons middling there were ten tons bad. The furnace was a very good one, and there would have been no difficulty if we had had the hot blast.

Thomas Strick, Esq., sworn—Examined by Sir F. Pollock.—I am an iron-founder. My foundry is in Swansea Valley. I am acquainted with Mr. Crane's iron. I consider it better and stronger than iron made in the ordinary way. I believe Mr. Crane's process is new. I never heard of hot blast being used with anthracite before his patent. Attempts had been made to use anthracite with cold blast, but they all failed. There are vast districts of anthracite in Wales, and since it has become useful by the application of hot blast, the value of property has increased at least ten-fold.

William Brough sworn—Examined by Sir F. Pollock.—

Crane

I am a mineral surveyor and civil engineer, and have been for the last forty or fifty years. For the last twenty years I have followed my profession in Cwm Neath and Cwm Fawey, in Glamorganshire. I am acquainted with the large basin; it extends from Cwm Neath to Pembrokeshire, which is about seventy miles, and its width is about eight miles. I am acquainted with Mr. Crane's invention, and I believe it to be new. Since the patent was taken out, the demand for anthracite has greatly increased, and it has brought speculation into that part of the country to build furnaces to make iron, by reason of the anthracite being made capable of smelting. To the best of my knowledge stone coal had never been tried before Mr. Crane's patent for smelting with a hot blast. I have seen it tried with coal blast, but it did not succeed. I called the public attention to the subject in the public newspapers respecting its great use, that it was a great desideratum if it would smelt iron.

Cross-examined by Mr. Solicitor-General.—In making iron with stone coal and hot blast, the process is nearly the same as when making iron with the cold blast—there may be some difference, perhaps, in the quantities that form the charges. The anthracite sends off very little flame and no smoke. The free coal does not resemble the anthracite; it sends off more flame and smoke, but not so much as bituminous coal. There is no gradation in the description of coal found in Wales, from bituminous to an approximation to anthracite, until it becomes quite anthracite—it is suddenly anthracite; and as you go east it ceases to be so; as you go west it continues to the very end of the basin. The bituminous coal overlies the whole of the anthracite many fathoms, perhaps 200. The anthracite is never found near the free burning coal, it is many fathoms from it. It is never intermixed. The small free burning coal will not coke. It is used for some purposes, but very little where the real stone, called culm, is to be got.

John Arthur sworn—Examined by Mr. Richards.—I am an iron-master and coal-merchant, and have been connected with the iron trade for the last twenty-five years. I purchased of Mr. Protheroe the Pwlfaron Colliery, with other collieries in the same valley. The coal I obtained at Pwlfaron was the anthracite. Until Mr. Crane's patent, I never heard of hot blast being applied

Price et al.

to stone coal in the manufacture of iron. I have heard of its having been attempted to be used with cold blast. I sold the Pwlfaron Colliery to the defendant after Mr. Crane's patent was taken out. Since then the value of stone coal has much increased. I am building works called Bluengeragh and Forch Goch. They are in the stone coal district. I made an attempt some time ago to bring out a concern in the same situation, by a joint company, but not with anthracite; but I failed. I had bituminous coal and anthracite on the same property. When Mr. Crane succeeded in making iron with anthracite, I had no difficulty in finding a company, and now I am erecting the works I have mentioned for that purpose.

Cross-examined by Mr. Sergeant Bompas.—I applied to Mr. Crane before I erected my works, for a license under his patent to make iron with anthracite and hot blast, and he granted me one. I was to pay him a shilling a ton; and if he paid a shilling a ton to Neilson, I was to pay it. I had no agreement with Neilson. Mr. Crane told me if there was any difficulty in getting a license from Neilson he would undertake to get it.

John Crowe sworn—Examined by Mr. M. Smith.—I am a chain-cable manufacturer. I have tested the specimens which I now produce. They are part of those marked C. The diameter of C, is three-quarters of an inch. I tested them with an hydraulic machine. The specimen, C, broke with a strain of 19 tons. The iron which I previously used, made by the old process, broke at 16½ tons. The specimen, B, is of smaller diameter; it broke at 16½ tons. The quality is much better than any iron I have before used.

David Rosser sworn—Examined by Sir F. Pollock.—I am a master smith. I have purchased anthracite iron from the Yniscedwyn Works. I have used it for various purposes. I am acquainted with the properties of iron. I consider the anthracite iron the best I ever saw.

John Taylor sworn—Examined by Sir F. Pollock.—I am a bricklayer at the Calder Iron Works, near Glasgow. Messrs. Dixon are the owners of those works. The hot blast was used there. It was put up under the superintendence of Neilson, about eight or nine years ago. It was made of boiler-plate malleable iron. The pipe for letting in and out the air was nine inches diameter. The

Crane v.

cylinder was about three feet wide, and perhaps ten feet long. It was heated by a furnace below it, and was placed on a brick arch to keep it from the fire. There were two half-moons in the cylinders to spread the air. The highest temperature we ever got was between 300 and 400 degrees. It never exceeded 400. We tried a great many other modes, but they all failed. Mr. Cundy then became manager of the works, and he drew a plan which was quite successful, and has been in operation for the last four years. These experiments were all after Neilson's patent was taken out. We were about two years trying experiments, and they cost Mr. Dixon 5,000*l.* or 6,000*l.* Neilson's invention never succeeded.

William Carpmael sworn—Examined by Mr. M. Smith. —I have for many years paid great attention to the manufacture of iron, and have read the specifications of all patents that have been granted for improvements relating to that manufacture. The first patent wherein the use of anthracite is mentioned, is, I believe, Martin's, which was granted in 1804. In my judgment, by the mode there described it would be impossible to make iron by the use of anthracite. The invention is very ingenious; but it would fail as soon as a blast of air was got upon it. There is no particular blast mentioned; it is described as the "blast;" no other blast than the cold blast was known at that time. I have read the specification of Philip Taylor's patent. The object of this invention was to use carburetted hydrogen gas, for this reason, anthracite or stone coal not containing that property, and other coal possessing that property, he proposed to use them together, and thereby to supply it artificially, in the process of blasting by the ordinary cold blast. This invention, so far as my knowledge goes, was a failure. I have read the specifications of Botfield's, Neilson's and Devaux's patents. Mr. Botfield's invention is to use, with or without the blowing apparatus, heated air. If he uses it without, he has a chimney to get an extra draft, and he conjoins with that the ordinary blowing machinery. Mr. Neilson's patent is for the application of hot air to smelting furnaces generally. He proposes to place between the blowing apparatus and the furnace to be blasted, a vessel, which is to be heated, and he says that the air vessel should increase in dimensions as the furnace to which it applies increases in

Price et al.

capacity or dimensions. The effect of following these directions would be, that, as you increased the internal capacity, you would relatively decrease the heating surfaces.

Mr. M. Smith.—I believe the air is heated by contact with the heating surface, as you have described?

Witness.—Yes—The direction of this specification is simply this:—Make a vessel of the required dimensions, and at one end have an opening for a pipe, through which you blow the air. At the other end you may have a pipe which connects with the twire, which conducts the air into the furnace, and therefore it blows through and through.

Mr. M. Smith.—Without any breaks at all?

Witness.—No breaks or anything of that kind; no necessary contact of the vessel and the current of air passing through it, only parts of the air would be in actual contact.

Mr. M. Smith.—Will the quantity of heat the air obtains diminish according to the increased size of that vessel?

Witness.—Clearly so. It might be illustrated in this manner:—If a blast of air was passing through this Court, or if a room was equally heated of one-tenth the size, the walls in each case being heated—

Mr. M. Smith.—In the latter case the air would be raised much higher in temperature than the air in this Court?

Witness.—Yes.

Mr. M. Smith.—Then by following these directions and increasing the size of the vessel, you would diminish the temperature of the air?

Witness.—Clearly so; and there are no other directions that would lead you to depart from that rule.

Mr. M. Smith.—What degree of temperature, in your judgment, could be obtained by following those directions?

Witness.—It would be difficult to say what temperature; but I should say, as you increase in size you might blow through without altering the temperature of it, if you increased in very large proportions.

Mr. M. Smith.—Now, I will take a receiving vessel, such as would be used in the furnace in ordinary use for the manufacture of iron?

Witness.—Then, if you follow this rule, and made the vessel in capacity equal to the large blast of a smelting

Crane

furnace of the iron-works, I should say you would never get 200 degrees, or anything like that, because the vessel would be so very large.

Mr. M. Smith.—Are you aware, Mr. Carpmael, practically from your own knowledge, whether receiving vessels of the hot-air apparatus put up after Mr. Neilson's patent, followed the directions there given, and were in that shape?

Witness.—My information generally goes that he followed the making of large vessels similar to what he describes in his specification.

The Lord Chief Justice.—Neilson did?

Witness.—Yes, my Lord.

Mr. Sergeant Bompas.—I think you said to your own knowledge?

Witness.—My information.

Mr. M. Smith.—Have you ever seen any, Mr. Carpmael?

Witness.—I have never seen one of Mr. Neilson's so applied. I do not think there is one existing in that way.

Mr. M. Smith.—You have never seen one, and you do not believe there is one existing?

Witness.—Yes.

The Lord Chief Justice.—That is, not exactly according to the specification?

Witness.—Not following it, my Lord.

Mr. M. Smith.—What is the plan you have seen adopted of late years as a hot-air apparatus?

Witness.—All tubes in various shapes and forms.

Mr. M. Smith.—For how many years have you seen those tubes in practice?

Witness.—I do not know. I have been at iron-works during the whole time that hot-air blast has been used. I do not know how long I have known tubes; but I have known of Neilson's patent ever since it existed.

Mr. M. Smith.—Have you seen tubes used as that model of Mr. Crane's?

Witness.—I have seen them at Mr. Crane's.

Mr. M. Smith.—Now, in your judgment, are those tubes the same mode as that pointed out in Neilson's patent?

Witness.—Distinctly not; they involve quite new principles.

Mr. M. Smith.—I believe you drew Mr. Crane's specification?

Witness.—I did.

Price et al.

Mr. M. Smith.—Were you aware of the modes of applying hot-air by tubes which you have spoken of, at the time?

Witness.—It was the only mode I knew to be in practice.

Mr. M. Smith.—I believe, Mr. Carpmael, you have been from time to time consulted about the use of anthracite or stone coal?

Witness.—I have been for several years consulted most extensively, both from America and from England—America in particular.

Mr. M. Smith.—Have you known of attempts having been made to use that coal?

Witness.—Yes; I have heard many modes suggested of burning it.

Mr. M. Smith.—Were you aware of any mode of burning stone coal combined with a hot-air blast before Mr. Crane's discovery?

Witness.—Never.

Cross-examined by Mr. Sergeant Bompas.—I have advised all my life on buildings and structures, and as to machinery of every class and kind. I have superintended works and erected works. The first I superintended was Marlow Bridge, under Mr. Millington. I made drawings for the bridge, and superintended the works occasionally. Mr. Clarke subsequently finished the bridge in consequence of Mr. Millington going to America. I was engineer to some salt works in Cheshire, that cost from 180.000*l.* to 200,000*l.* I directed a large portion of the finishing of the works, both as to the canal and the buildings. I am chiefly engaged in patent business, but I am very largely engaged in advising on machinery of various constructions, independent of patents. I have read Botfield's specification. He broadly claims the use of heated air in blast furnaces. He says, "I claim as my patent the use of the additional chimney or chimneys, and the application of rarified air, gas, flame, or heated air, to, at, or near the twire or twires of the blast furnace."

George Cottam sworn—Examined by Sir F. Pollock.—I am an engineer and general iron-founder, and have been connected with the iron trade for the last thirty years. I have never heard, prior to Mr. Crane's patent, of iron being made by the use of anthracite and hot blast. I think it a very useful invention. In 1837, I heard a

Crane v.

paper read at the British Association on the subject of Mr. Crane's invention, and I immediately ordered ten tons of it to try experiments. I try experiments on all new iron. I cast a bar or two of it, and I found it very strong. The average weight at which ordinary iron four feet long and one inch square breaks, is 440 to 445 lbs., but Mr. Crane's iron of the same dimensions broke at 599 lbs. These experiments were made in 1838, and not at all with reference to this trial. On account of the great strength of this iron, it will be found of great advantage in constructing large buildings, as the same strength may be obtained with a saving of 25 per cent. in the weight.

Sir F. Pollock.—That is my case, my Lord.

The Solicitor-General.—May it please your Lordship, Gentlemen of the Jury, I am afraid when the moment arrives at which you will have to deliberate upon your verdict, you will be of opinion that the whole merits of this case might have been laid before you in a much shorter time than has been occupied. I cannot help thinking that a great many matters have been introduced in the course of the evidence which have nothing on earth to do with the point upon which alone your judgment is to pass; and having attended to the course of the statement on the part of my Learned Friend, I was a little at a loss to know how, in the result, my Learned Friend meant to prove many of the facts he has taken great pains to prove. Therefore it has been in the uncertainty of the colour which in one course of the case might be given to it, we have found it necessary to travel to a certain extent into many facts which, as the case is now left, appear to me to be totally immaterial.

Gentlemen, every cause of this description is of importance. It is of great importance that due encouragement should be given to talent, and to genius, and to industry, and, where it takes place, expenditure of capital, in the endeavour to discover and produce useful inventions. We are all interested that fair protection should be given to objects of that nature. But that is not the only point that is of importance in a patent cause. Not only are there persons who spend their time and talent (and their money frequently) in endeavouring to bring before the public useful inventions; but there are others who are exceedingly anxious to intercept the fair course of trade and

Price et al.

commerce, who seek to appropriate to themselves matters in which they have no just right or interest whatever; who seek to appropriate for their individual purposes that in which, if there be any merit in the way of genius, belongs to others, and which the whole public have just as much right to use as themselves. And the important duty which a jury has to perform in a case of this description is, to watch and to ascertain the real character of the case, not to allow any of those speculators who are watching anxiously to get beforehand with their neighbours, and with others engaged in the same trade, to appropriate to themselves a vast deal of merit of which not a shadow belongs to them; who seek to confine to their own advantages a trade which ought to be free.

My Learned Friend seemed to me to desire to carry the cause by the force of the eulogy of his client. I scarcely ever heard so much said of any patriot who had come under my notice, of any great and distinguished character, who had benefited his country half so much as Mr. Crane. Indeed, the encomiums bestowed upon him, and the importance of the part he has acted, I only recollect to be equalled in a very celebrated work with which we have all been lately entertained. I do remember that in the Muffin and Crumpet Punctual and Early Delivery Company, in "Pickwick," there is an eulogy on that Company nearly equal to that which my Learned Friend has bestowed on Mr. Crane; but with that exception I do not recollect ever to have heard so much praise bestowed upon an individual as I have heard from my Learned Friend.

Gentlemen, it is of extreme importance, that you should be very early called to what is the real point of this case, and of Mr. Crane's merits. You will long ago have observed that Mr. Crane has no merit whatever in bringing before the public notice the hot blast. The hot blast was an invention of which Mr. Crane only heard in common with the rest of the public. The endeavour to appropriate stone-coal as an article of fuel in the manufacture of iron, that is an idea which Mr. Crane has no pretence to the merit of having originated; individual after individual had perceived what would be the advantage of using stone-coal as an article of fuel in the smelting of iron, and for a variety of other purposes, long before Mr. Crane had any dreamings on the subject.

Crane

That hot blast is an invention which has been brought before the public, not to be limited in its application to this or that particular purpose, not to be limited to furnaces used merely for the making of iron, but applicable to all purposes, all furnaces, all ovens, all apparatus in which great heat is to be applied to articles requiring it for the purpose of their manufacture. Mr. Neilson's patent is not a patent for the manufacture of a particular article by the application of the hot blast. He brings forward to the public the manner in which the hot blast may be erected, and suggests the great use that may arise from the application of that hot blast to furnaces, ovens, and other things. It is essential, therefore, to be borne in mind, that Mr. Neilson has a right to apply his hot blast to all the purposes to which it can be made applicable. He understood too well the merit of his own invention; he was too well apprized of the great extent of its application to state in his specification that it was to be applied only to this or that purpose or manufacture. His statement is, that it is to be applied to the heating of ovens and furnaces, and various other descriptions of works, to which he refers; he has supposed, and justly supposed, that wherever the application of that hot blast can be found to be useful, whether for one purpose or another, as he had the cost, and the labour, and the merit of the invention, he was entitled to participate in the profits. But if I apprehend this case, his patent is not worth a farthing; everybody may have the profit of it but him. One man will find out that it is good to heat an oven for a certain purpose, and that it will operate upon a certain class of fuel. We hear of a thousand descriptions of cases applicable, no doubt, to different purposes. One man will find out that for the making of china, or some other purpose, one description of coal is extremely material to be used; another will find out that a different description of coal is important for another branch of manufacture; and the thousand classes may have, for ought I know, a thousand different applications. But if every gentleman who finds out that the hot blast is good to operate on that coal, may take out a patent for it, what is the use of Mr. Neilson's patent to him? The question here is, what appears to me the absurd pretence, the unfounded pretence, that because Mr. Neilson's patent has been found applicable and useful

Price et al.

in its application to stone-coal, the individual who can first get a patent for that, has a right to exclude all the world, and Mr. Neilson, I suppose, among the rest, from the application of the hot blast to stone-coal. Why stone-coal any more than any other coal that may be applicable to any other manufacture? Pray what is there in Mr. Neilson's patent that is to prevent him, if he thinks fit, applying his hot blast to stone-coal or anything else? Is his patent only that he may apply it to certain fuel, or to a certain description of coal, or a particular description of furnace? By no means; he has a right to apply the hot blast to every description of fuel on which it will operate. And Mr. Crane—the folks engaged in the iron trade having been trying to work stone-coal with cold blast at a certain time—when Mr. Crane, in common with others, formed a guess of what it would do, he runs and gets a patent, gets his Counsel to pronounce the eulogy you have heard, and which is to exclude the rest of the world from the application of this hot-air blast to stone-coal; and all the merit of the greater strength of iron, all the merit of the economy, is, forsooth, not to be applied to poor Mr. Neilson, who invented the hot blast, which is the sole cause of all this, but to Mr. Crane; he is the benefactor to the country that is to extend its commerce so much. And what has Mr. Crane done? He found that attempts were making to manufacture iron from stone-coal; he found there was such a thing as the hot blast. People had endeavoured to manufacture iron from stone-coal by the cold blast, upon which Mr. Crane says, "Oh! I will take the hot blast, and I will apply it;" and iron is made now as before, not the slightest alteration in the materials, not the addition or subtraction of a material, no alteration in the course of the manufacture. There is the furnace as it was before; it had not the benefit of Mr. Crane's genius bestowed upon it, and nothing but the application of Mr. Neilson's patent to it; and there is the iron. That is the whole; no new discovery as to the mode of making iron; no alteration in the course of manufacture, nor in the least degree any alteration in the application of the materials, or the materials themselves, nothing on earth; but the question simply being whether Mr. Neilson's patent may be applied to a mode of making iron perfectly well known

Crane v.

before, and which only failed to make good iron for want of Mr. Neilson's patent.

Gentlemen, I beg your attention to dates when I am considering Mr. Crane's patent and his merit. Mr. Crane's patent is dated in September, 1836. Did Mr. Crane bestow one sixpence, did he spend one hour in any experiment before he took out his patent? There is not a tittle of evidence to show that he did. In September, 1836, he launches his patent, and what does he do? sends for Mr. Neilsou's man to erect his apparatus; that apparatus is not put in work, according to the evidence, until December or January after he had got his patent; he knew no more about it, when he got his patent, than any other person in England; he cannot show you that he spent an hour or a sixpence, or that he knew anything about it, except that he had the genius to conceive it was best to get a patent, and then to see if anything could be found out which would support that patent. You have no evidence, (and you may depend upon it you would have had it if the truth or facts had warranted it, or the greatest industry could have furnished it,) you have no evidence that he ever spent an hour, or that it had at all occupied his time, or that he had any knowledge, or genius, or talent on the subject more than the rest of the world; the first you know of him in this respect is getting his patent. What do you know of him then? cannot he erect his own apparatus? No: he applies to Mr. Neilson, gets, as you hear, Mr. Neilson's license, pays Mr. Neilson a remuneration for the use of his patent, and he claims sympathy as being the inventor, and protection because, forsooth, he has rendered the public a service. He talks of the difference in Mr. Neilson's patent (which I shall come to by and by) by these pipes. What has he to do with that? He knows nothing about it; he sends for Neilson's man, M'Kenzie, and gets him to erect the apparatus on Mr. Neilson's plan. They say not the plan described in the specification; we will see that, and also see whether it is material. But he knows nothing about how far the hot blast will answer; he knows nothing about the mode of applying the hot blast, whether the original form in which Mr. Neilson did it or any of the modifications, not the least in the world did he know about it. He sends to Mr. Neilson, or gets M'Kenzie to come and construct his

Price et al.

apparatus. In December, 1836, or January, 1837, he begins to operate; he comes to a stand at first; he begins again in February, 1837, and at a date subsequent to the patent, he being utterly ignorant of all upon the subject, there being not a tittle of evidence to show he was apprised of any one circumstance until after he had got this patent. Anything which is said by the gentlemen who are the owners of anthracite property, on Mr. Crane's patent being found of so much value when applied to stone coal, giving as it does increased value to their property—that they should meet and dine together, and drink one another's healths, can have nothing to do with this cause. I have no doubt whatever it would be an exceedingly agreeable thing; you know Englishmen always congratulate themselves upon their good fortune by a good dinner, and now and then, among other things, a little speech, and that took place upon this occasion. But what had occurred to deserve a speech but the ingenuity of getting a patent? He gets a patent for the application of somebody else's patent to a known state of things, and that is his merit. The dates are, therefore, extremely material in investigating the claims of these parties. What is the meaning of Mr. Crane getting Mr. Neilson's license? I suppose my Learned Friend is instructed to say, why it was better to be free from all doubt, it was better to pay a sum to Mr. Neilson than to have any litigation. Much better, I admit it would have been, beyond all doubt, to have given credit where it was justly due; but what is the nature of the payment? A shilling per ton. Mr. Neilson has nothing to do with this, this is not his patent plan. Mr. Crane, who has abundance of merit as a man of genius and an inventor, and a patriot, and a benefactor to the public, is also privately extremely generous of having nothing to do with Mr. Neilson's patent; he is kind enough to give him a shilling a ton for all the iron he makes on the application of the hot blast.

Now I beg you to attend a little to Mr. Crane's acts, and contrast them with the advocacy of his counsel. Whoever wishes to oppose a patent, somehow or other it does so happen that as soon as they read the specification all their ideas, if they are opposed to patents, become confused, and I never saw a man against a patent who could understand the specification; he will

Crane v.

always turn everything upside down; he knows it is written by a man of genius and of science; in all probability he brings to bear the same genius and the same science, but when he reads the specification, instead of applying his knowledge as he would do if he set to work about it, he continues to misunderstand every part of it, and to forget all those general directions, all those general principles with which those who drew the specification would take for granted it would be read. Specifications are not drawn for persons wholly ignorant of the subject, they are drawn in the expectation that they will be read by men who bring some knowledge of the general principles applicable to the subject, and who have also the same practical knowledge and experience to guide them in the execution of the work. What, if a man says you are to increase the size of your cylinder, witnesses will be sure to increase it in the very figure and form which is the least useful, and will judge of its merits by that form which they choose to assign to it; each witness instead of applying his honest judgment to the case, his practical experience, his knowledge of what is required and the mode of obtaining it—instead of doing that, he reads it, and he gives you a figure and a form which never could have been dreamt to have been in the mind of the framer of the specification, and which is wholly unsuited to the subject. Mr. Neilson announces to the world that the application of the hot blast will be of very great advantage, and Mr. Neilson's patent appears certainly to have much more claim on public attention than a great many of the patents which are obtained; and you will be so good as to bear in mind that everything you have heard upon the subject of the improvement in the manufacture of iron is to be referred, not to any discovery subsequent to Mr. Neilson's, but the mere application of Mr. Neilson's patent, which, in the common course of events, will be found to be extending its application to materials which before were not susceptible of manufacture without such aid, but which are likely to be brought into operation now. I dare say it yet remains for a vast many articles to be discovered that may be usefully operated on and brought into manufacture by Mr. Neilson's patent. When the attention is once drawn to the hot blast, and various effects produced beyond what was expected, no doubt a variety of persons, each in his turn, will be seeking to

Price et al

apply it to new materials; but I repeat, if every man who finds out that it is applicable to a particular fuel to which it has not been used, if he is entitled to a patent to give him the exclusive use, I say Mr. Neilson's patent is of very little use.

Now I beg to call your attention to Mr. Neilson's patent and its terms before I come to Mr. Crane's. The patent is stated to be for "an improved application of air to produce heat in fires, forges, and furnaces, where bellows or other blowing apparatus are required." Pray what is the limitation of the use of that patent? Has there been any attempt to impeach the patent? No; Mr. Crane, when he was not interested to dispute the patent, knew better. Whether he advised with Mr. Carpmael then, or who else, I do not know, but no doubt he advised with somebody. Mr. Carpmael drew his specification, and that Mr. Carpmael had read Mr. Neilson's specification there can be no doubt. Who then thought of disputing Mr. Neilson's patent? Was it known whether Mr. Neilson continued to apply the apparatus of a given size, precisely the form with which he had begun. No doubt it must have been known that he had varied that form, but was it considered that that was any such variation of principle as destroyed his patent? Not the least in the world, for long after this Mr. Crane, who, if he knew anything about it, must have known the modified form in which the principle had been applied; for you know that a patent is good, not by reason of the precise and particular form which is adopted, but it is the principle of the invention which oftentimes may be applied in a great variety of ways. You know it is the principle of the invention which is protected, and that juries are generally occupied in hearing evidence of attempts to evade it, and forming their judgment whether or not this or that particular mode of effecting the same object is or is not a colourable imitation and pretended variation, retaining all the substance of the patent; whether that is the case is more generally the subject for the consideration of the jury than the validity of the patent itself. Nobody has dreamt of disputing Mr. Neilson's patent, Mr. Crane least of all, who, whatever benefit he has got, he has got it under Mr. Neilson's sanction, with Mr. Neilson's instruction and assistance. The title of the patent, therefore, is a patent for the

Crane v.

improved application of air to produce heat in fires, forges, and furnaces, where bellows or other blowing apparatus are required.

The Lord Chief Justice.—Quite general.

The Solicitor-General.—Yes, my Lord. Now you will observe what is the present attempt, that if any man discovers a forge or furnace to be used with any new description of fuel, or to be applied to any other purpose, Mr. Neilson's patent is not applicable to that, but it may be the subject of a new and exclusive patent right. There is no foundation for it. When he comes to specify, he declares "that the nature of my said invention for the improved application of air to produce heat in fires, forges, and furnaces, where bellows or other blowing apparatus are required, and the manner in which the same is to be performed is particularly described and ascertained as follows, that is to say:—A blast or current of air must be produced by bellows or other blowing apparatus in the ordinary way, to which mode of producing the blast or current of air this patent is not intended to extend." Those who choose to retain the old form of bellows or fan are at liberty to do so; Mr. Neilson does not claim that as new; his patent is not for that state of things; he only claims that his hot blast can be used in connexion with that species of apparatus. Having stated what it is not intended to be applied to, he proceeds to state what it is. He says,—"The blast or current of air so produced, is to be passed from the bellows or blowing apparatus into an air vessel or receptacle made sufficiently strong to endure the blast, and through and from that vessel or receptacle by means of a tube, pipe, or aperture into the fire, forge, or furnace." That is, the air is to be introduced into a vessel or receptacle, and to pass out by means of a tube, pipe, or aperture into the fire, forge, or furnace—it is to be a vessel or receptacle. I have before stated that specifications on subjects of this sort are supposed to be addressed to men of some practical science, men who have the means of considering and of estimating the effect of the particular concern to which it is to be applied, of adopting the principle in such form as the particular instance may demand. He tells you it is to be a vessel or receptacle, indicating that it is quite immaterial what particular and precise receptacle it should be; it is to be one which shall be modified

Price et al.

according to that to which it is to be applied. The word vessel is very general, something which would contain air, and that is all the description he gives of it. Need he give more? Why, he is addressing persons who are connected with furnaces and forges and the application of air; he therefore deals in general terms, well knowing that those general terms are abundantly sufficient to put the mind at work, and to give every facility which can be required to accomplish the object which the patent proposes to attain. He says, "The air vessel or receptacle must be air-tight or nearly so, except the aperture for the admission and emission of the air, and at the commencement and during the continuance of the blast it must be kept artificially heated to a considerable temperature." What temperature should that be? Why, that must depend upon the manufacture. One manufacture would require one degree of temperature and another would require a different degree. As his application of the hot blast is intended for furnaces, air furnaces generally, which are applicable to an infinite variety of manufactures, that infinite variety varying in every possible degree in intensity of the temperature also required, so he tells you, that it must be heated to a considerable temperature; but in that part of the specification he does not give you any precise number of degrees to which it is to be heated: "It is better that the temperature should be kept to a red heat or nearly so." What is the degree of temperature which will give red heat? Why, you hear it is a degree abundantly sufficient for all the purposes of this particular manufacture, and more. It exceeds the 600°, which is said to be an adequate degree of temperature, the temperature at which it is said lead will melt, and which is perfectly adequate to the purpose of this manufacture. He says, it is to be "red heat, or nearly so." What is the evidence you have heard of some of the early forms in which this patent was applied? Why, that it was red or reddish, or a tint of red, or approaching to red heat. He says, that it is better it should be kept to a red heat, or nearly so, that red heat exceeding what is necessary for this particular purpose; and every man in every manufacture must bring to a subject of this description, where you have to apply a general power, a power which has not been created with a view to limitation in its

Crane

application to a particular manufacture, where a certain degree of heat only is required and no more, but of universal application, each man in his own manufacture must ascertain and know what is the degree of temperature which suits that manufacture. This, as a general standard, he tells you; it should be kept to a considerable temperature, and should be kept to "a red heat, or nearly so," that red heat, as I before said, considerably exceeding what is necessary for making of iron; and then he goes on to say, "But so high a temperature is not absolutely necessary to produce a beneficial effect. The air vessel or receptacle may be conveniently made of iron, but as the effect does not depend upon the nature of the material, other metals or convenient materials may be used. The size of the air vessel must depend upon the blast and on the heat necessary to be produced. For an ordinary smith's fire or forge, an air vessel or receptacle capable of containing 1,200 cubic inches will be of proper dimensions; and for a cupola of the usual size for cast-iron founders, an air vessel capable of containing 10,000 cubic inches will be of a proper size. For fires, forges, or furnaces upon a greater scale, such as blast furnaces for smelting iron and large cast-iron founders' cupolas, air vessels of proportionably increased dimensions and numbers are to be employed. The form or shape of the vessel or receptacle is immaterial to the effect, and may be adapted to the local circumstances or situation. The air vessels may generally be conveniently heated by a fire distinct from the fire to be affected by the blast or current of air, and generally it will be better that the air vessel and the fire by which it is heated should be inclosed in brickwork or masonry, through which the pipes or tubes connected with the air vessel should pass. The manner of applying the heat to the air vessel is, however, immaterial to the effect if it be kept at a proper temperature." What are those directions? They are applicable to an invention which creates the power and gives the means of influencing a vast variety of manufactures, many of those differing in every variety of circumstances. Here are general directions. The air receptacles or vessels are to be increased in number according as local circumstances may require; a very high temperature is essential, red heat is one that may be generally considered approved and useful, but not always necessary. Mr.

Price et al.

Neilson obtains this patent in 1828,—what do you hear of it? You hear by the witnesses who are called, that Mr. Neilson or his men are at various places erecting apparatus or inspecting apparatus. The first that is produced you are told is a vessel in this form (pointing to a model); here is a pipe or bottle made of iron. You observe, the fire is placed underneath, the flame plays through the bars, and so encircles the pipe or bottle, it being inclosed in brickwork or masonry. This is a model of the first form that was assumed. It is extremely probable that the temperature which would be obtained by this means might suit a vast variety of purposes to which forges and furnaces to be heated by the application of this blast might be applied. The first account that you have of it is, that it is used, I think, in some places in Scotland, and that two months after it had been in use, the workman returns and finds the owner of the foundry, for whose purpose this had been erected by Mr. Neilson, recasting himself for the same purpose in the same form. They had had the experience of two months; they knew how far it was applicable to the purpose of smelting iron. At the end of two months they recast the same form a little stronger; that continues at work, the man tells you, for twelve months. The principle of this patent is, that you are to have the atmospheric air confined in a vessel exposed to the action of fire, and that atmospheric air, thus inclosed, thus heated, blown into the furnace. What is there to control the shape of this vessel? You want a greater quantity of heat than a vessel of given dimensions will afford you. What do you do? You may extend its length, or you may have two instead of one, if you please, or you may have ten instead of one or two. Is there any difference in the principle? Not the least in the world. The principle is the exposure of this vessel charged with atmospheric air to the action of the fire, and then having it blasted into the furnace. What does it matter to the principle whether there are one, two, three, eight, or ten? They are all pressed out from the same orifice, there is nothing more in one than the exposure of the vessel to the action of the fire so as to get the atmospheric air to the required temperature, whether it is one, or two, or three, is perfectly immaterial. The higher the temperature you require, the longer you must keep

Crane

the atmospheric air exposed to the action of the fire. If it passes through a straight pipe, it will only be exposed to the heat a certain portion of time; if it is not quite long enough you may bend the pipe to give it length. Well, then, inasmuch as the air passes through the vessel, that portion of it which comes in contact with the iron sides will of course be more exposed to the action of the heat than that which is in the interior of the stream. The middle of the volume of air not coming in contact with the sides of the vessel will not be so heated as the surface, which is immediately in contact with the sides of the heated vessel. One object, therefore, will be, if you want a temperature higher, so to conduct the air through, as to bring the largest possible portion in contact with the heated surface of the vessel. Do men of science doubt if they want to give additional heat to the air how it is to be done? Is there any magic in the idea, that if you want the heat of the air increased, you will expose that air longer to the action of the heated surface or the fire? None at all; everybody says no, none at all. If, therefore, you wish to retain the air for a longer period of time, instead of having this (pointing to the bottle-shaped model), you put it into the pipe, it may be one, two, or three; and you observe that which is erected by Mr. Neilson, which is the subject of the license, which is paid for per ton,—the air, as you observe, enters, as it may be here (referring to Mr. Crane's model-pipes), it passes through two or three of these, then it is expelled into the chamber; it re-enters another, passes through three more, and so three and three, or six and six, no matter which, until having been kept a certain portion of time, for no other purpose than to make it travel through and be exposed to these heated surfaces, and to change the exterior surface, which will come in contact with this, it passes out. What is that but in effect just lengthening these pipes, only that instead of lengthening you bend them? Extend this a sufficient length, and you will have the whole effect; so that it is to be a pipe to be shortened, to be only of a given length, and you are not to have sense enough if it is not long enough to add a little to it. It is nothing more than producing a certain length of pipe—that length would be as easily obtained by lengthening it longitudinally as by dividing it in

Price et al.

the manner you have seen; that is the whole object of it. Is there any difference? Not the least in the world; and that is but in effect what it would be if you were to join each of those pipes together and extend them, putting certain stops in particular parts; that is the whole of it. And you understand that all this is inclosed in masonry or brickwork, the same as this is covered with brickwork. Here is the fire (pointing to the models) underneath, playing through these bars, and so is the fire underneath, this playing through these bars, exposed to its action round these pipes, and the whole inclosed, to prevent the escape of the heat, with masonry or brickwork. Is this Neilson's patent? My best witness is Mr. Crane; he had not got his apparatus until after he had got his patent, yet seeing and knowing the description of apparatus to be used, beyond all doubt seeing and knowing Mr. Neilson's patent, he knows he is right, he is perfectly satisfied that he has no pretence, even with Mr. Carpmael's assistance, of resisting it, and accordingly he gets Mr. Neilson to erect it himself, and come to the agreement with him which you have heard. I therefore say, are Mr. Crane's works conducted upon Mr. Neilson's plan? Here they are constructed by Mr. Neilson, and yet an attempt is made to persuade you that Mr. Crane, who knew nothing upon earth upon the subject, who had no knowledge or intelligence which he could bring to bear on the subject, you are told that Mr. Crane is acting under something quite independent of Mr. Neilson. Gentlemen, it only requires to be looked at and considered a moment, to be perceived, first of all, that the attempt on the part of Mr. Crane is nothing more than this,—a patent which is not professed to be limited to particular and specific purposes, but which is professed to be applicable to all purposes, which can have no other object than to operate on a different species of fuel with which those furnaces may be fed. Mr. Crane says, "I will take out a patent for applying Mr. Neilson's patent to one particular article of fuel." Is Mr. Neilson's patent limited to one particular description of fuel? If, as I before said, you could get a patent screw, would it be limited to one particular article to which to apply it? Certainly not. The most valuable patents are those which are of general application, which give you the

Crane v.

means of bringing other powers and other materials into useful action. No patentee ever yet was thought to be subject to this, that as the knowledge of his patent extended, that as its use and advantage to the public became more obvious, his interests were to be limited; and that every man who found out that the patent could be used for this or that purpose, had a right himself to interrupt the patentee and to take out a patent.

The first question to which I call your attention is to show you Mr. Crane has, in truth, done nothing upon earth but apply Mr. Neilson's patent to known articles by known means to effect a known object. Stone coal had been applied more or less to the manufacture of iron; attention was drawn to it, which so applied, there was no other distinction whatever between the mode of manufacturing the iron with that sort of coal and with any other sort of coal. The object was to manufacture the iron; the means were by various coal, some of one description, and some of another, the stone coal among the rest, so that you will observe, that the thing to be made was a thing perfectly well known before, the materials with which it was to be made were perfectly well known before. Now comes the means by which those materials are to be brought into action, and that is the hot blast of Mr. Neilson; so that there being notoriously a patent for hot blast, Mr. Crane applied the well-known hot blast to the well-known materials for making iron, and that is all he does.

Now the question is, whether, in point of law or fact, such a patent can exist. I say it cannot; and my first object has been to present to your consideration the circumstances under which Mr. Crane has set about to establish this claim. And I beg of you to remember, that in a case where so much merit is claimed and where with so much merit being claimed, the whole success of the case must depend upon, to a considerable extent, if not altogether, defeating an admitted valuable patent—I say, it is extremely material that in such a case you should bear in mind those parts to which I have called your attention; and that in point of fact, the persons claiming the merit have been obliged to call in the original patentee in order to carry his own patent into effect. And who is he bringing this action against? The defendants are iron-masters, possessing a valuable

Price et al.

property, composed to a considerable extent of this stone coal. Attempts have been made, much beyond what fairness warrants of ascribing, even in this valuable discovery of the hot blast, and of its application so generally to the purposes of fuel in the manufacturing of iron, attempts have been made very much to extend its consequences. It turns out that new establishments have been created in the iron trade, quite independently of the use of stone coal, where bituminous coal is used. It also turns out that anthracite or stone coal has become an article of great and most extensive export. But all the increased value which has lately attached to the property, all the new establishments which are erected, are to be ascribed to the consumption of stone coal in making iron—there is no foundation for that. That for a certain description of iron to be used for certain purposes, the application of stone coal is valuable, there is not a shadow of doubt; my clients are as glad to know it as anybody; they are manufacturers of iron, and they occasionally manufacture it from stone coal, as you have heard. A person came over to their manufactory from the plaintiff, to see what they were doing; upon which, you will observe, he is invited to the furnace, he is permitted to see everything; and they said, "There, you may go about and inform yourself;" not the least impediment, not the least secrecy; but this action is brought by their neighbour, Mr. Crane, against them, because, forsooth, they, in common with him, seek to benefit by Mr. Neilson's patent of the hot blast, using their own stone, using their own material in the old-fashioned way. "But no," says Mr. Crane, "I have a monopoly of Mr. Neilson's patent as applicable to stone coal, because I made such haste that I got my patent before I knew the least in the world upon the subject, before I had made any experiments, before I had melted an ounce, or knew whether it would or not." Under those circumstances the action is brought.

Now, Gentlemen, first of all, it is said that Mr. Crane is the inventor of a new manufacture. What does he mean by "a new manufacture?" Making iron in the same way that it was made before, and merely borrowing the application of another man's patent plan—is that being the inventor of a new manufacture? The description of coal used, no doubt, operates on the quality

Crane v.

of the iron, for it appears that iron, notwithstanding the roughness of the material, is one of the most delicate manufactures in which you can be engaged; for it appears that the same furnace will vary, nobody can tell why or wherefore; it will to-day produce very good iron; it will to-morrow, from materials which are supposed to be identical almost,—the furnace charged in the same way, conducted by the same men, materials from the same heap,—will produce iron of a very different description, and nobody can tell why or wherefore. One week the furnace will work well and kindly, and produce good iron, the next week it will be perverse and unkind, and produce very bad iron, so that according to this, every variety of iron which may be produced in consequence of the use of a different kind of coal is a new manufacture. You hear there are a thousand of these apparently causeless varieties in the quality of the article produced, which no doubt must be something or other in the fuel, the precise nature of which has not yet been disclosed. If you will recollect, in the Abbercarne works, which we are told have failed, there was one very awkward circumstance, which, under the particular state of the times, appears to me very likely to have produced something in the atmosphere to lead to such a consequence; iron was very low; if the Abbercarne works succeeded in making good iron from stone coal and the cold blast, there was a certain sum of 300*l.* a-year to be paid; but iron was so low, and the quantity made or required was so small, that it would not pay to make it. I do not wonder it would not pay, so as to bring the charge of 300*l.* a-year on the proprietors, but it failed. You observe there was a small furnace, which the witnesses have described as an ordinary furnace, though a small one, that did succeed, whereupon they were induced to build a larger one; that larger one did not succeed; somehow or other it did succeed up to the time it was sold, but when it came into the hands of the British Iron Company something or other occurred, and that which had succeeded up to the time of their purchase failed. You would suppose in a large establishment, with a splendid title like that which you have heard,—you would suppose that there were some intelligent persons who when they saw that furnace at work and were about to purchase the works, would have paid some

Price et al.

attention to ascertain whether those works were performing their destined office with effect, yet they buy it while it is in work; it is continued in work for some short time, it is then discontinued, and the proprietor gets no 300*l.* a-year; and the price of iron, I am very sorry to say, is not such now as to give any great encouragement to embark in a speculation which may bring with it the payment of 300*l.* a-year. But you may observe, that the stone coal succeeded in the small furnace there. Now the large one, I think, if I recollect right, is open to some remark; I think that is the one that was worked with wooden cylinders, that is described as having been so bad and so imperfect in its operations, that the surprise would rather have been that it succeeded than that it failed. Mr. Northall's evidence is addressed to that. I am told that he said he did not think it would succeed even with coke. So that you observe, that a place purchased expressly with a view of making iron from the cold blast and from stone coal—succeeds for a time; it fails, having a most imperfect apparatus; when, to give effect to any new attempt of this sort it ought to have had every chance given to it by the most perfect apparatus, yet it failed; but you find it succeeded even under the old apparatus with the best materials.

Now, Gentlemen, calling your attention to who is the plaintiff, and what are the circumstances in which he stands, working by a license from Mr. Neilson, getting his patent before he had the apparatus in existence, not showing you he possessed the slightest knowledge on the subject, or that he had made even any inquiry upon it, brings his action against somebody else, because, in common with himself, that somebody also has applied a known invention to known given public purposes. What is the ground of this?

The Lord Chief Justice.—Is it anything but a question of law at last?

The Solicitor-General.—I think not.

The Lord Chief Justice.—I think it is not. I have been listening with great attention to it; it must come at last to, what is the meaning of the word "manufacture," under the Statute, whether the application of a known and patented mode of working the blast to a special purpose, is a manufacture? and when you come to the other point, whether he is the first and true in-

Crane

ventor of it? Then it is again a question of law, whether the applying this knowledge, which is part at least of the invention—and a very important one—applying it to that which is also known, though not as it appears to me previously combined with it, makes him or not the first or true inventor. I do not see anything to leave to the jury.

The Solicitor-General.—I thought your Lordship would have a difficulty. The only part I wish to call your attention to is in regard to the fifth plea.

The Lord Chief Justice.—I thought that was a separate one; but you involve in that the same considerations.

The Solicitor-General.—I have not the least objection to the Court drawing any inference which can properly be drawn.

The Lord Chief Justice.—I think it will be the better course to hear it in the common way; *pro forma*, a verdict here, and then, under a special case, on the facts which are on my notes.

The Solicitor-General.—In any way that your Lordship pleases.

The Lord Chief Justice.—Moving on my notes.

The Solicitor-General.—I would move to enter a nonsuit, and if the Court should think fit, turn it into a special case or a special verdict. I have no wish for a special verdict.

The Lord Chief Justice.—There is a great deal of nicety in it.

Sir F. Pollock.—I think my Friend's entering a nonsuit is contrary—

The Solicitor-General.—I will do that which is most suitable to the case.

Sir F. Pollock.—I would rather leave it to the Court to dispose of it altogether.

The Lord Chief Justice.—To say whether it shall be the one or the other?

Sir F. Pollock.—Yes.

The Solicitor-General.—That I have no objection to.

The Lord Chief Justice.—I think we have been beating about it from first to last; it is a mere question which might be raised upon a demurrer.

The Solicitor-General.—I thought your Lordship would intimate to me when you had arrived at that conclusion, otherwise I should have applied to you at the close of the

Price et al.

case on the part of the plaintiff; but there is always an inconvenience, I think, until one knows what course the Judge will take.

The Lord Chief Justice.—Then let it be so. A verdict for the plaintiff for one shilling, subject to a motion on your part, either for a nonsuit or special case or verdict.

The Solicitor-General.—Yes, my Lord; the Court is to draw any inference, of course.

The Lord Chief Justice.—O, yes.

Sir F. Pollock.—It is our special jury, my Lord.

The Lord Chief Justice.—It is a proper case, certainly, for a special jury.

Sir F. Pollock.—I don't know whether your Lordship would reserve the power to certify with respect to the merits of the invention.

The Lord Chief Justice.—That is under the Act.

Mr. Sergeant Bompas.—We generally take the rule that the Court shall have the same power as at *Nisi Prius*.

The Lord Chief Justice.—Reserve the same power.

Verdict accordingly,—One Shilling damages.

CRANE *v.* PRICE AND OTHERS.

Before the Lord Chief Justice (Sir N. Tindal), Mr. Justice Erskine, Mr. Justice Coltman, and Mr. Justice Maule.—Jan. 17, 22, and 27, 1842.

A Rule was obtained according to the leave reserved, and it was directed by the Court that the case should be argued as a special case, and that the printed shorthand notes of the evidence should be taken as if they were the notes of his Lordship at the trial.

The Attorney-General (Sir F. Pollock), Mr. R. V. Richards, Mr. Montague Smith, and *Mr. Webster* appeared for the plaintiff.

Mr. Sergeant Bompas and *Mr. Rotch* appeared for the defendants.

After the argument, which occupied three days, the Court took time to consider, and the following is the written judgment of the Court, as delivered by *The Lord Chief Justice*:—

Crane v.

This was an action on the case for the infringement of a patent, granted to the plaintiff on the 28th September, 1836, for an improvement in the manufacture of iron. The declaration was in the usual form, and the defendants pleaded thereto, first, that they were not guilty; secondly, that the plaintiff was not the first and true inventor of the said improvement. Upon each of which pleas issue was joined. Thirdly, after setting out at length the plaintiff's specification, the defendants pleaded, that the alleged improvement therein described, was not a new manufacture, invented by the plaintiff, within the intent and meaning of the Statute, as to the public use and exercise thereof in England, which allegation was traversed by the plaintiff in his replication. Fourthly, the defendants pleaded, that the nature of the plaintiff's invention, and the manner in which it was to be performed, was not particularly described or ascertained by the plaintiff in his specification; upon which plea issue was joined. And in their last plea the defendants, after referring to the plaintiff's specification before set out in the third plea, stated the grant of letters patent, dated the 11th of September, 1828, to one James Beaumont Neilson, for an improved application of air to produce heat in fires, forges, and furnaces, where bellows or other blowing apparatus were required; that Neilson's invention was the production and application of a hot air blast, and was in public use, with Neilson's license, in the smelting and manufacturing of iron from ironstone, and was the hot-air blast in the plaintiff's specification mentioned; that the plaintiff could not use the hot-air blast mentioned in his specification without Neilson's license; and that he had obtained such license before the grant of his letters patent; and that the using by the plaintiff of the hot-air blast in the smelting of iron from iron-stone, combined with anthracite or stone-coal, as mentioned in his specification, was a using and imitating of Neilson's invention, whereby the plaintiff's patent was void. The plaintiff replied to this last plea, that Neilson's invention was not the same hot-air blast; and that the machinery and apparatus adopted for the application thereof, mentioned and referred to in the plaintiff's specification, was not, nor was the using by the plaintiff of the invention as described in his specification a using and imitating of Neilson's invention,

Price et al.

described in Neilson's specification: which allegation is traversed by the defendants in their rejoinder.

At the trial before me, the verdict was entered for the plaintiff on all the issues, subject to the opinion of the Court upon the evidence given at the trial, as contained in a report agreed upon between the parties, the Court being at liberty to draw the same inference from it as a jury might draw.

On the argument, it was contended by the defendants, that the verdict ought to be entered for them on each of the issues joined on the record; but as the main question between the parties turns on the third issue, which involves the question, whether the invention of the plaintiff is a manufacture within the intent and meaning of the Statute of James; that is, whether it is or is not the subject-matter of a patent; and as the determination of this issue in favour of the one party or the other, will render the decision of the other issues free from difficulty, the simplest way will be, to apply ourselves in the first instance to that question.

Now, in order to determine whether the improvement described in the patent is or is not a manufacture within the Statute, we must in the first place ascertain precisely what is the invention claimed by the plaintiff; and then by the application of some principles admitted and acknowledged in the application of the law relating to patents, and by the authority of decided cases, determine the question in dispute between the parties. The plaintiff describes the object of his invention to be, the application of anthracite or stone coal combined with hot-air blast, in the smelting or manufacture of iron from ironstone, mine, or ore, and states distinctly and unequivocally, at the end of his specification, that he does not claim the use of a hot-air blast separately as of his invention, when uncombined with the application of anthracite or stone coal. Nor does he claim the application of anthracite or stone-coal when uncombined with the using of hot-air blast; but what he claims as his invention is, the application of anthracite or stone-coal and culm, combined with the using of hot-air blast, in the smelting and manufacture of iron from iron-stone, mine, or ore. And the question, therefore, becomes this—whether, admitting the use of the hot-air blast to have been known before in the manufacture of iron with bituminous

principle of decisions in patent causes.

Crane v.

coal, and the use of anthracite, or stone-coal, to have been known before in the manufacture of iron with cold blast, but that the combination of the two together (the hot blast and the anthracite) were not known to be combined before in the manufacture of iron, whether such combination can be the subject of a patent.

Criterion of patent for combination

We are of opinion, that if the result produced by such a combination is either a new article, or a better article, or a cheaper article to the public, than that produced before by the old method, that such combination is an invention or manufacture intended by the Statute, and may well become the subject of a patent. Such an assumed state of facts falls clearly within the principle exemplified by *Chief Justice Abbott*,* where he is determining what is or what is not the subject of a patent, namely, it may, perhaps, extend to a new process to be carried on by known implements or elements acting upon known substances, and ultimately producing some other known substance, but producing it in a cheaper or more expeditious manner, or a better or more useful kind. And it falls also within the doctrine laid down by *Lord Eldon*,† that there may be a valid patent for a known combination of materials previously in use, for the same purpose, or even for a new method of applying such materials. But the specification must clearly express, that it is in respect of such new combination or application.

Subject-matter of patent

Test of Specn in patent for combination

Criterion of patent for combination

There are numerous instances of patents which have been granted, where the invention consisted in no more than in the use of things already known, and acting with them in a manner already known, and producing effects already known, but producing those effects so as to be more economically or beneficially enjoyed by the public. It will be sufficient to refer to a few instances, some of which patents have failed on other grounds, but none on the ground that the invention itself was not the subject of a patent.

Instances of patent for new combination

We may first instance Hall's patent, for applying the flame of gas to singe off the superfluous fibres of lace; where a flame of oil had been used before for that same purpose.‡ Derosne's patent, in which the invention con-

---

* *The King* v. *Wheeler*, vol. i. p. 394.

† *Hill* v. *Thompson, et al.*, vol. i. p. 369.

‡ *Hall* v. *Boot*, vol. i. p. 423.

Price et al.

sisted in filtering the syrup of sugar through a filter, to act with animal charcoal, and charcoal from bituminous schistus, where charcoal had been used before in the filtering of almost every other liquor except the syrup of sugar.* Hill's patent, above referred to, for improvements in the smelting and working of iron; there the invention consisted only in the use and application of the slags or cinders thrown off by the operation of smelting, which had been previously considered useless for the production of good and serviceable metal, by the admixture of mine rubbish. Again, Daniell's patent was taken out for improvements in dressing woollen cloth, where the invention consisted in immersing a roll of cloth, manufactured in the usual manner, into hot water.†

another instance of the same

another instance, by introducing fresh element

another instance do.

The only question, therefore, that ought to be considered on the evidence is, was the iron produced by the combination of the hot blast and the anthracite a better or a cheaper article than was before produced from the combination of the hot blast and the bituminous coal? and was the combination, described in the specification, new as to the public use thereof in England? And, upon the first point, upon looking at the evidence in the cause, we think there is no doubt, that the result of the combination of the hot blast with the anthracite on the yield of the furnaces was more, the nature, properties, and quality of the iron better, and the expense of making the iron less, than it was under the former process, by means of the combination of the hot blast with bituminous coal.

Test as to value of combination, real feature of novelty & proper description in Specon

It is to be observed, that no evidence was produced on the part of the defendants, to meet that given by the plaintiff on these grounds; and that it was a necessary consequence, from the proof in the cause, that from the substitution of the anthracite coal, in whole or in part, instead of or in the place of bituminous coal, the manufacture of the iron should be obtained at less expense.

It was objected, in the course of the argument, that the quality or degree of invention was so small, that it could not become the subject-matter of a patent: that a person who could procure a license to use the hot-air blast under Neilson's patent, had a full right to apply that blast to coal of any nature whatever, whether bituminous or stone coal. But we think, if it were necessary to con-

---

* *Derosne* v. *Fairrie*, vol. i. p. 664.

† *The King* v. *Daniell*, vol. i. p. 453.

Crane v.

sider the labour, pains, and expense incurred by the plaintiff, in bringing his discovery to perfection, that there is evidence in this cause, that the expense was considerable, and the experiments numerous. But in point of law, the labour of thought, or experiments, and the expenditure of money, are not the essential grounds of consideration on which the question, whether the invention is or is not the subject-matter of a patent, ought to depend. For if the invention be new and useful to the public, it is not material whether it be the result of long experiments and profound research, or whether by some sudden and lucky thought, or mere accidental discovery.

Labour of experiment
t essential to
onstitute exclusive
ight to invention.
o discovery may
ven be accidental

The case of monopolies states the law to be, that where a man, by his own charge or industry, or by his own wit or invention, brings a new trade into the realm, or any engine tending to the furtherance of a trade that never was used before, and that was for the good of the realm, that the King may grant him the monopoly of a patent for a reasonable time. If the combination now under consideration be, as we think it is, a manufacture within the Statute of James, there was abundant evidence in the cause, that it had been the great object and desideratum, before the granting of the patent, to smelt iron stone by means of anthracite coal, and that it had never been done before; there was no evidence on the part of the defendants to meet that which the plaintiff brought forward. These considerations, therefore, enable us to direct that the verdict ought to be entered for the plaintiff on the third issue; that it was a new manufacture—new as to the public use and exercise thereof within England and Wales.

Criterion
of
subject-matter

On the same ground, also, the second issue is disposed of in favour of the plaintiff. No evidence was produced on the part of the defendants, to show any inventor earlier than the plaintiff; nor does the fact that there was an earlier inventor appear from the cross-examination of the plaintiff's witnesses.

As to the first issue, namely, whether the defendants have infringed the patent, we think it clearly appears on the evidence, that the defendants had used, either in part or in whole, the combination described in the specification of the plaintiff's patent. The plaintiff's evidence goes fully to show certain infringements, and that is not met by any explanation on the part of the defendants. Indeed,

Price et al.

the defendants' case did not appear to rest on this point at the trial, so much as on the important question raised by them—whether the improvement described in the specification, was a manufacture within the Statute of James.

Upon the fourth issue, which raised no more than the usual inquiry, whether the nature of the invention was sufficiently described in the specification, the usual evidence was given, that persons of competent skill and experience could, by following the directions, produce the manufacture described with success, and the evidence was entirely unopposed; upon this issue also the verdict ought to be entered for the plaintiff.

Criterion of sufficiency of Specn

With respect, however, to the issue raised in the rejoinder in the plaintiff's replication to the fifth plea, we are of opinion, that taking the whole evidence brought forward by the plaintiff, it is impossible to perceive any substantial or real distinction between the hot-air blast, and the machinery and apparatus described in Neilson's specification, from that described and referred to in the plaintiff's—or to say, that the using by the plaintiff of the invention described in his specification was any other than a using and imitating of the invention described in Neilson's specification. The plaintiff, indeed, worked by license under Neilson's patent at the time of his discovery. On this fifth issue, therefore, we think the verdict should be entered for the defendants. Then arises the question, whether the plaintiff is, or is not, entitled to the judgment, notwithstanding the verdict on this fifth issue; on which point, the argument on the part of the defendants is, that the taking out a patent for an invention, which invention cannot be used or enjoyed by the public except by means of the former invention of another person, which former invention is itself the subject-matter of a patent still in force, is void by law. Undoubtedly, if the second patent claims, as part of the invention described in it, that which had been the subject-matter of a patent then in force, it would be void, on the double ground that it claimed that which was not new (which indeed would equally be the case if the former patent had expired), and also that it would be an infringement of, and inconsistent with, a former grant of the King still in force, which latter consideration alone would make a new grant void. But in this case there is an express disclaimer of any part of

Crane

A Specn may
nclude the
ubject-matter
f a former patent
ombined with
omething else
rovided ~~th~~ the
laim be restricted
o such combination
disclaiming the
~~[illegible]~~ subject-
matter of the
former patent.

the invention extending to the use of the hot-air blast which was covered by Neilson's patent, the specification describing, that the application of the hot-air blast was well understood and extensively applied in many places where ordinary fuel is employed. The validity, therefore, of the plaintiff's patent cannot be impeached on either of the grounds above adverted to. Unless, therefore, the grantee of the new letters patent is bound by law to specify whether such former invention, which is excepted, was so excepted on the ground of its being generally known and used by the public, or on the ground that it was the subject of a patent that secured the use of it to a former patentee, the new patent will be good. But that distinction is as much in the knowledge of the public as the grantee of the patent. If, indeed, the new patent had been taken out for improvements or alterations in an invention secured by a former patent, there, for obvious reasons, greater particularity would be necessary to distinguish the new from the old. But the present specification expressly says, I take the whole of the invention already well known to the public, and I combine it with something else.

Now it is further argued, that in point of law, no patent can be taken out which includes the subject-matter of a patent still running or in force. No authority was cited to support this proposition, and the case which was before *Lord Tenterden*, and in which he held, that where an action was brought for an infringement of improvements in a former patent granted to another person, and still in force, that the plaintiff must produce the former patent and specification; that at least affords a strong inference that the second patent was good.* The case of *Harmar* v. *Playne*† is a clear authority on the same point; and upon reason and principle there appears to be no objection. The new patent, after the expiration of the old one, will be free from every objection, and whilst the former exists, the new patent can be legally used by the public by procuring a license from Neilson, or by purchasing the apparatus from him or some of his agents; and the probability of the refusal of a license to any one applying for it, is so extremely remote, that it cannot enter into consideration as a ground of legal objection.

~~[illegible]~~ Use of
ubsequent patent
however subject
 license of former
atentee.

On the whole, therefore, we think the verdict is to be

---

* *Lewis and another* v. *Davis*, vol. i. p. 471.

† Vol. i. p. 246.

Price et al.

Parkin v. Harrison et al.

entered for the plaintiff on all the issues except the fifth; that the verdict is to be entered for the defendants on the fifth issue; but that, notwithstanding such verdict, the judgment must be given for the plaintiff.

Judgment for the plaintiff.

PARKIN *v.* HARRISON AND OTHERS.

In the Court of Chancery, before the Vice-Chancellor (Sir L. Shadwell), —Jan. 17, 1840.

In this case *Mr. Knight Bruce* applied to His Honour the Vice-Chancellor for an injunction to restrain the defendants, their servants, or agents, from paving Whitehall, or any other road or way for carriages, with blocks of wood formed with the grain inclined to the horizon and dowelled together as described and claimed in the specification of letters patent granted to the plaintiff, Thomas Parkin, on the 9th day of April, 1839. In support of the application, it was solemnly declared by the plaintiff that, after many experiments and great expense, he invented "improvements in railroad and other carriages, and in wheels for such carriages, and in roads and ways on which they are to travel," amongst which improvements were several improved modes of forming and laying wooden blocks for pavements, which he described in his specification, as follows:—"My improvements in roads and ways consist according to this, my first mode, of paving them with blocks of wood, having the grain inclined to the horizon in some angle varying from about 45 degrees to about 70 degrees, the grain of all the blocks leaning in the same direction, or towards the same points of the compass. And according to my second mode of paving with similar blocks, as in my first mode, but the alternate rows of blocks leaning towards the opposite point of the compass, each pair of leaning blocks being sometimes held together by a dowell, passing through the middle of both blocks." [*] That immediately after this declarant's patent was granted, he publicly advertised and exhibited his invention.

---

[*] The above extract is the only part of the specification which came into question.

Parkin v.

That on the 27th of June last, a patent was granted to Richard Hodgson, of Salisbury-street, in the Strand, for an invention communicated to him from abroad, by the Count de Lisle, which invention does not differ in any material respect from the invention patented by the plaintiff on the aforesaid 9th day of April.

That on or about the beginning of July the defendants and others purchased the said Richard Hodgson's patent, and advertised proposals for forming a company called the "Metropolitan Patent Wood Paving Company," to carry on the alleged invention of the Count de Lisle. That shortly before the date of such advertisement, the plaintiff had entered into an agreement with a Mr. Hunt Grubbe, for the sale to him of so much of his patent as relates to wood paving, upon the following terms:—1000*l.* to be paid down, 1000*l.* more on the 15th of July, and 1000*l.* more in three months, on condition of parties being found by Mr. Hunt Grubbe, within that period, to furnish capital, to carry out the invention; and in the event of either of these conditions not being complied with, then the agreement to be considered null and void. That on the 13th of July, the said Hunt Grubbe informed him that he had assigned the said agreement to Richard Hodgson. That on the 15th of July, Mr. Hodgson called on plaintiff and gave him to understand that he had purchased the agreement of Mr. Hunt Grubbe, on behalf of the company, and, on paying the 1000*l.* due on that day, stated that he had no doubt the company would pay the 1000*l.* on the 28th of September, as provided by the agreement. It further appeared by this declaration, that Mr. Hodgson declined to pay the sum of 1000*l.* on the 28th of September, and stated that the company would neither purchase the patent, nor take a license to use the pavement, because it would amount to an admission that the patent granted to him, the said Richard Hodgson, was void; but that the company were willing to employ the plaintiff to superintend their business, and pay him a handsome salary. The declaration also stated several propositions for an arrangement between the plaintiff and Hodgson, on behalf of the company, which, however, were not carried into effect, and the company having proceeded to have a part of the road opposite Whitehall paved, the plaintiff was compelled, in support of his patent right, to make this application.

Harrison et al

John Isaac Hawkins, Civil Engineer, in his affidavit, states, that he was applied to in the month of August, by certain parties to negotiate with the plaintiff for the purchase of his patent, so far as respects wood pavement; but that plaintiff, not being able to get any final answer from the said Mr. Hodgson, until after the 28th of September, the negotiation went off, and has not since been renewed; and in the opinion of deponent the plaintiff thereby lost the opportunity of disposing of his patent to good advantage.

On the part of the defendants the following affidavits were filed:—

William Carpmael, Civil Engineer, saith, that he was consulted by the plaintiff previous to his applying for his patent, to advise as to the proper title, for which purpose the plaintiff delivered to him a paper containing the particulars of his invention; that immediately on preparing the title of plaintiff's patent, he returned the said paper writing, but that he has a perfect recollection of the contents of the said paper, and that the invention there described did not, in any manner, resemble the invention patented by Mr. Hodgson, (a model of which was produced to Mr. Solicitor-General, at the time of his application for the patent,) or the wood pavement now laid down at Whitehall, or the models or shapes described by the figs. 23 and 24, contained in the drawings referred to by the said plaintiff in the specification of his patent.

Augustus Comte de Lisle saith, he is a native of, and domiciled in, France. That, in the month of May last, he came to this country and communicated an invention of his own to Mr. Richard Hodgson, and who, on his behalf, applied for letters patent for the same, and which were granted on the 27th of June last. That the application for the patent was opposed by two persons, but that no opposition was entered by the plaintiff or by any other person on his behalf. That after the sealing of the patent no secret was made of the invention, but that it was freely communicated to all persons taking an interest therein; and in particular as to the 9th of July, the deponent exhibited and explained his invention to His Royal Highness the Duke of Sussex and a numerous auditory.

Richard Hodgson saith, that the Reverend Mr. Hunt Grubbe was present at such public explanation, and informed deponent that plaintiff had obtained a patent for

Parkin v.

an invention in some respects resembling that of the deponents; and that he had purchased so much of that patent as related to wood paving. And deponent not being aware of the merits or nature of said plaintiff's alleged invention, and having no means of judging whether in truth it did or did not resemble deponent's invention, and perceiving that the agreement was conditional, and being apprehensive that the said Hunt Grubbe and plaintiff might get up an opposition to the company for carrying into effect the principle of deponent's invention, which he was then forming, and which was known by the said Hunt Grubbe, the deponent agreed to purchase the right of the said Hunt Grubbe in the plaintiff's patent. That the deponent did not give the plaintiff to understand that he procured the assignment of the said portion of the plaintiff's patent as the solicitor, and on behalf of the persons calling themselves the "Metropolitan Patent Wood Paving Company;" neither did he say that he, deponent, had no doubt the company would pay the 1,000*l.* on the 28th of September, as provided in the agreement; and being advised that the payment of the 1,000*l.* might be considered prejudicial to his patent he declined to make such payment, and suffered the agreement to become void. Both deponents say, that the wooden pavement laid down at Whitehall is in accordance with the principle of the said invention of the said Richard Hodgson as described in his specification, and that the inclination of the blocks of wood of which the said pavement is composed is not of about forty-five degrees as stated in plaintiff's said bill, but such inclination is of the precise angle of sixty-three degrees, twenty-six minutes, five seconds, and eight-tenths, being the only angle claimed in the said last-named specification, and that on which the principle of the invention depends; and that the appositively leaning blocks are not such blocks, nor are the same fastened, as are mentioned by the plaintiff in his first and second modes of paving with wood as described in his specification; but that the same are held and fastened together by pegs, each peg being placed in the centre of the two isosceles triangles, which each lateral side surface of each block presents, and which said triangles are produced by each block being cut at the precise angle aforesaid; and that by such means each block gives the same support which it receives from the other block, and enabling the

Harrison et al.

whole mass of blocks when fastened as aforesaid to present a compact surface of any extent.

Mr. Jacob, on behalf of the defendants, contended that the plaintiff was not the inventor of the mode of wood paving claimed in his specification, but that the invention had evidently come to his knowledge by the publicity given by the Count de Lisle of the invention discovered by him long before the plaintiff's patent was applied for, and therefore prayed his Honour to refuse the injunction.

The Vice-Chancellor.—In this case the question will be, first of all, whether the plaintiff has a valid patent, and next, whether the defendants have infringed the patent. Well, now with respect to the plaintiff's patent, I must observe that, in the first place, it never appears to have been acted on; there is no instance alleged in which it has ever been said that there has been any dealing on it whatever, except that strange course of treaty on the subject which arose out of the agreement between the plaintiff and Mr. Grubbe. Well, that having been the only dealing on it, it is impossible to say that any validity is to be attributed to the patent on account of its length; for the patent, I think, was dated the 9th of April, and the specification was filed on the 9th of October, and there has been a treaty about it, and that is all; and consequently, therefore, I think the Court is not bound to say that the length of time is such as of itself *primâ facie* establishes the legal right of the patentee. Now I cannot but myself think, therefore, that the Court is at liberty to look into the specification, and see whether it is *primâ facie* reasonably clear that the specification is good; and when I look at the specification, I am sure I am not willing to give any final judgment on it, because it is not my province so to do; but I cannot but myself have considerable doubt whether this specification is a sufficiently good specification as to this matter:—"And, 7thly, My improvements in roads and ways consist, according to this, my first mode, in paving them with blocks of wood having the grain inclined to the horizon in some angle, varying from about forty-five degrees to about seventy degrees, the grain of all the blocks leaning in the same direction or towards the same points of the compass." Well, now it is observable that where a party is speaking about angles, he is speaking of a matter of quantity, about which it is extremely easy to speak with accuracy, and I cannot

Parkin

Objection to Specn where things that admit of being accurately expressed are not so.

but myself think that, according to the language that is here used, it is really and fairly a doubtful matter, that is to say, legally doubtful, whether that thing which might have been expressed with sufficient accuracy has been expressed with sufficient accuracy, or whether it is possible to make out exactly what it was that the party did mean. Now, strictly speaking, the words as they stand do only imply that it was to be at some angle, not forty-five or seventy degrees. I am quite sure the party did not mean that, and, therefore, I have a case before me in which in the words of the specification the party uses language of which all that can be said is that with reasonable certainty it does not express the party's meaning. Well, then, in the latter part, where he speaks of what he had before spoken of:—"Having regard to my 7th head of improvement of roads and ways, I say that the first and second mode is the paving with blocks of wood, having the grain inclined to the horizon from about forty-five degrees to about seventy degrees, and I claim the dowelling of the blocks together in paving when slanting or leaning in opposite directions;" and then he speaks about the rails, and so on. Now, I cannot but myself think here, that the party has meant to have it understood that the dowelling itself is a part of the invention, and therefore, *primâ facie*, I should have thought it rather contrary to one's common experience to have it, in the year 1839, claimed as an invention, that certain blocks of wood were to be fastened together by means of dowelling, and I doubt whether that is any invention at all. Now I cannot but myself think, that on such a patent as this, before the Court does anything so as to interfere against the defendants, that the Court ought to take some method to have it established that the plaintiff has got that legal right which the plaintiff pretends to have. But, then, with respect to the second part of the case, supposing that the plaintiff's patent is good, is it so clear that what the defendants have done is a violation of the patent? I do not mind the mode in which that affidavit is made, on which Mr. Knight Bruce has laid so much stress; namely, the speaking by Mr. Hodgson and the Count De Lisle in the way they do about the invention; what they say is, "They verily believe that the invention for which the above-named plaintiff took out the letters patent in the bill mentioned did not and does not, in any respect, correspond to or resemble the

Harrison et al.

invention of this deponent, Richard Hodgson, communicated to him by the other deponent, Augustus De Lisle;" and they say "that the plaintiff hath improperly laid claim to the said last-named invention, and hath endeavoured to include the same or such part thereof as relates to wood-pavement in the specification of his said patent." Now I cannot but think that the fair inference of that affidavit is, that they mean to say, that the patent in fact and truth is for an invention different from the defendants' invention, but that the plaintiff wishes to have it thought that his specification is for the same invention; that is what I understand the plaintiff to say, and therefore by no means to admit, as Mr. Knight Bruce presses on me that they do admit by the affidavit, that these two inventions are the same.

Now, with respect to the defendants' invention, as I understand it from their specification, it is a precise and definite thing, and is an invention by means of cutting a cube in a certain manner, which is detailed in the specification itself, and it appears to me that where the defendant does point out a particular mode of cutting the solid body,—the cube, in such a manner as that, invariably and of necessity, there must be figures precisely of the same shape produced, always having certain given angles upon the planes of the sides, and, therefore, always producing, when laid transversely one across the other, that certain isosceles triangle of which he speaks, which enables him exactly to determine and place the same in all places, however numerous, in which they can be introduced; the hole and the pin which will have the effect of uniting several blocks with each other, in the manner that is easily shown by those instruments. I cannot but think that he, *primâ facie*, at least, has invented a definite thing which does materially differ from that very vague and indefinite thing which the plaintiff has described in his specification. Now I think myself, therefore, that, before I interfere by injunction, what I ought to do is to direct the plaintiff to bring such action as he may be advised; in that action he will have, in the first place, to make out that his patent is a good and legal patent, that is the first fact he will have to make out; and then he will have to make out that by the act which the defendant actually has done, that the patent, if good, has been infringed; and both those points can be determined, simply by directing that the

Definite descriptio
in Specon is evidence
against allg infringe
of patent vaguely
described in its Spec

Parkin v. Harrison et al.

plaintiff shall bring an action. It is not necessary to give any special directions as to admissions, but it does appear to me that the case stands in such a shape that it will be too much to infer from these very singular affidavits, which contain a series of conduct of a most extraordinary kind with respect to the agreement and the treaty on it; it does appear to me to be too much to infer from those affidavits that there has been a clear admission on the part of the defendants, that what the defendants are doing is the same thing as what the plaintiff has taken out a patent for, or to infer that the defendants have admitted their patent to be only for that thing for which the plaintiff has taken out his patent, or to infer that the defendants have at all conceded any point; which if I do correctly understand their affidavits, they were determined from the beginning to defend as manfully as by law they might, and perhaps by other means if necessary. And it does appear to me, therefore, that in this case the proper order to be made is to direct the plaintiff to bring such action as he may be advised, and to direct the motion to stand over, with liberty for both parties to apply.

END OF VOL. II.

INDEX.

ABANDONMENT—

Parties making experiments with reference to any manufactures, and even to some extent producing articles according to means subsequently patented by others, such patents will not be invalidated if the parties have failed to bring them into public use, or have abandoned their efforts before success, even though the experiments have been more or less public.—*Cornish v. Keene*, 314; *Galloway v. Bleaden*, 567; *Macintosh v. Everington*, 186

ACTS OF PARLIAMENT, *See* "STATUTES."

ADMIRALTY—

The Court of Queen's Bench will not issue a mandamus, commanding the Lords of the Treasury to fix the terms or prices for anchors made by the Admiralty according to the plaintiff's patent.—*Ex parte Perring*, 234

ALTERATION—

A patentee, who claims more than is useful, may alter and disclaim the same after verdict against the patent.—*Morgan v. Seaward*, 104

BILL IN CHANCERY—

A demurrer to a bill to restrain an infringement of a patent, by reason of the bill not setting out the specification, is not good.—*Westhead v. Keene*, 429

The Court will not dismiss a bill on the coming in of the answer if the plaintiff undertakes to proceed at law to try the validity of the patent, and the question of infringement.—*Westhead v. Keene and others*, 448

CAVEAT—

A caveat against the sealing of a patent at the Great Seal will be dismissed with costs, notwithstanding the Attorney-General may have reported against the novelty of the invention.—*Cutler's Patent*, 527

CERTIFICATE—

A Judge, at the trial of a patent cause, will certify that the validity of the patent came into question on the plea that the invention was not new.—*Gillett v. Wilby*, 561

CLAIM—

Claims, when inserted in a specification, are not in aid of the description of the invention, but a means of ascertaining what is new.—*Kay v. Marshall*, 122

COMBINATION—

The combination of two things which are separately old in a process of manufacture is a good subject for a patent.—*Crane v. Price*, 669

CONFIRMATION, *See* "Statute 5 and 6 Will. IV., c. 83"—

The Court will not confirm letters patent where it is shown that the specifications of previous patents granted very many years before, contained a like invention, although the invention is shown to be useful, and that it had never before been brought into public use.—*Westrup and Gibbins' Patent*, 219

CONSIDERATION—

If a patent is for two or more things, and one is old or not useful, the patent is bad.—*Morgan v. Seaward*, 103

COSTS, *See* "Statute 5 and 6 Will. IV., c. 83"—

The Privy Council will give costs to the party opposing an application to confirm letters patent when the petitioner fails.—*Westrup and Gibbins' Patent*, 233

At the Great Seal, costs will be given against the party opposing a patent passing through that stage.—*Cutler's Patent*, 531

DEFENDANT—

A Court will not grant a defendant the right of having from the plaintiff specimens of his manufacture in order to test the validity of the patent.—*Crofts v. Peach*, 233

DEMURRER—

Where a general demurrer has been filed to a bill for an account and to restrain infringement, the Court will not order the question of demurrer to stand over till a trial at law to ascertain the validity of the patent, but will go into, and settle the question of the propriety of the demurrer.—*Kay v. Marshall*, 129

In case of a general demurrer to a bill, all the statements in the bill must be taken to be true, and if the plaintiff makes out such a title which unanswered would sustain his right to a patent, a general demurrer is bad.—*Kay v. Marshall*, 124

A demurrer to a plea that a party had infringed before the date of a disclaimer held to be bad.—*Perry v. Skinner*, 404

If a party proceed on a contract to recover moneys for the purchase of patents, and the defendant plead that part of the patents are void, a demurrer to such a plea is good, for unless the whole contract be fulfilled, it fails altogether.—*Chanter v. Leese*, 422

A demurrer to a bill, because it does not set forth the specification of a patent, is bad.—*Westhead v. Keene*, 429

DISCLAIMER—

A patentee may disclaim a part of his invention after verdict adverse to the validity of a patent, and thus set up the new and useful parts of the patent.—*Morgan v. Seaward*, 104

DISCLAIMER—*continued*—

The Master of the Rolls will not remove a disclaimer from the roll though it may extend the grant, such a disclaimer being void by the Statute.—*Sharpe's Patent*, 462

DISCOVERY—

The Court of Chancery will aid a defendant in ascertaining whether a patent is held in trust for more than the number of persons allowed by the grant.—*Few v. Guppy*, 235

DRAWINGS—

An error in a drawing showing two parts, so that they would not move, though stated to do so in the specification, would not invalidate a patent, for a workman, being told that they were to move, would correct the error. —*Morgan v. Seaward*, 37

EQUIVALENTS—

Where the differences made by a defendant do not change the principle of an invention, they are mechanical equivalents.—*Morgan v. Seaward*, 89

ERRORS—

In a drawing showing two parts, so formed that they would not move, although they were described in the specification as moving, such error will not invalidate a patent, as a workman would correct such an error.—*Morgan v. Seaward*, 97

EXCLUSIVE ENJOYMENT—

The Court will retain an injunction where the patentee has had six years' exclusive enjoyment.—*Bickford v. Skewes*, 449

EXPERIMENTS—

An experiment in a man's study or closet, if it fails, there is an end of it.—*Cornish v. Keene*, 366

If a man makes experiments and never communicates them to the world, and they are forgotten, another person making like experiments may take a patent.—*Cornish v. Keene*, 366

That there had been many experiments made in the same line, and almost tending to the same result is clear, and that those experiments were known to many persons.—*Galloway v. Bleaden*, 610

EXTENSION OF TERM OF LETTERS PATENT, *See* "Statute 5 and 6 Will. IV., c. 83"—

Swaine's Patent, 515; *Stafford's Patent*, 516; *Wright's Patent*, 517—519; *Kollman's Patent*, 520; *Robert's Patent*, 521; *Downton's Patent*, 522; *Erard's Patent*, 112; *Galloway's Patent*, 107; *Kay's Patent*, 168

FRAUD—

A Court of Equity will relieve a party from the consequences of a deed on ascertaining that the party was induced to enter into it by fraudulent representations of a patentee that his invention would do certain things which he knew it would not.—*Lovell v. Hicks and others*, 182

GREAT SEAL—

The Lord Chancellor will pass a patent through the Great Seal notwithstanding a caveat has been entered, and the Attorney-General has reported against the novelty of the invention.—*Cutler's Patent*, 527

IMPROVEMENT—

The evidence on the part of the plaintiff is, that it is cheaper, and cheapness is an improvement.—*Cornish v. Keene*, 363

INFRINGEMENT—

A jury is to look at the substance and not to the form of the parts; if in substance the result is obtained by the same principle as the plaintiff's invention, differing only in the use of mechanical equivalents, it will be an infringement.—*Morgan v. Seaward*, 89

The question whether the defendant has not adopted what is equivalent, is for the jury.—*Jupe v. Pratt*, 308

Where a patent only describes the use of all anthracite coal in the making of iron by hot blast, the claim being for the combined use of anthracite and hot blast, the patent will be infringed by the use of hot blast to one-third anthracite and two-thirds of coke of bituminous coal.—*Crane v. Price*, 674

INJUNCTION—

If the patentee has been long in the possession of his patent, the Court will not disturb the title, but give credit thereto till the right has been tried at law.—*Bickford v. Skewes*, 453

The Court will grant an injunction although the defendant may undertake not to infringe again.—*Losh v. Hague*, 513; *Morgan v. Seaward*, 1; *Abbott v. Williams*, 381; *Curtis v. Cutts*, 430; *Kay v. Marshall*, 117; *Lukey v. Robson*, 413; *Parkin v. Harrison*, 637; *Westhead v. Keene*, 428

INSPECTION—

Abbott v. Williams, 381; *Morgan v. Seaward*, 1

INVENTION—

The causing of a continuous layer of fibres to be cemented into a fabric, is an invention for which letters patent may be secured.—*Abbott v. Williams*, 383

The fixing of parts of a float-board of a paddle-wheel at an angle which would cause each part to enter at the same place, is an invention for which letters patent may be taken.—*Galloway v. Bleaden*, 567

The combining in the same fabric, elastic warp, and inelastic warp in the same plane, may be secured by patent.—*Cornish v. Keene*, 314

The combination of two things, each old, in an old process of manufacture, is an invention for which letters patent may be granted.—*Crane v. Price*, 672

The constructing a two-wheel carriage, so that the driver may sit behind, and the passenger enter in front, is an invention for which a legal patent may be secured.—*Gillett v. Wilby*, 540

The dividing the surface of a table in parts, pointing to a centre, and causing such parts to diverge from that centre, so as to make openings to receive filling pieces, is an invention which may be secured by patent.—*Jupe v. Pratt*, 242

The combination of several parts of a paddle-wheel, so as to cause the float-rods to enter and leave the water at desired angles, is an invention which may be protected by patent, although all the parts separately are old.—*Morgan v. Seaward*, 96

INVENTOR—

Although the invention be new, if it be found that the party who got the patent, was not the man whose ingenuity first discovered it; that he had got it from A. B.; or had taken it from a book published in England, and which was open to all, it would be a question whether he was the inventor.—*Cornish v. Keene*, 365

JURY—

The novelty of an invention, and the sufficiency of a specification, is for the jury.—*Morgan v. Seaward*, 96

LEGAL ESTATE—

The Privy Council will grant an extended patent to the party or parties having the legal estate, 519

LICENSE—

A license forms no part of a patent, and therefore a license to more than twelve persons, though they are partners, will not invalidate a patent.—*Protheroe v. May*, 531

A Court of law will not take into consideration the possibility of a patentee refusing to grant a license, when considering the validity of a subsequent patent, which requires the use of the previous patent.—*Crane v. Price*, 575

MANDAMUS—

The Court of Queen's Bench will not grant a mandamus, requiring the Lords of the Treasury to settle terms or prices on which Her Majesty's service may be supplied under a patent.—*Ex parte Perring*, 234

MANUFACTURES—

The word "manufacture," in the statute, must be construed in one of two ways. It may mean the machine when completed, or the mode of constructing the machine.—*Morgan v. Seaward*, 100

The combination of anthracite coal with hot blast in the manufacture of iron, is a manufacture, and the circumstance of hot blast being already the subject of letters patent will not prejudice the validity of the subsequent patent.—*Crane v. Price*, 674

MISTAKES, *See* "ERRORS."

NOTICE OF OBJECTIONS, *See* "Statute 5 & 6 Will. IV., c. 83, s. 5"—

In the Privy Council, a notice of objection, that "a patent was granted for an invention substantially the same about thirty years since," was sufficient, as the parties might have ascertained by search, what the patent consisted of.—*Westrup and Gibbins' Patent*, 233

NOTICE, SERVICE OF—

The Master of the Rolls will not order service of notice out of the jurisdiction of the Court, in the case of a petition to remove a disclaimer enrolled by a patentee (resident in Scotland) to an English patent.—*Sharpe's Patent*, 481

NOVELTY—

Whether it is new or not, is a question for the jury. The question raised for the jury was this: whether the various instances brought for-

NOVELTY—*continued*—
ward by the defendants, amounted to proof that before or at the time of taking out the patent, the manufacture was in public use; or whether it fell short of that point, and proved only that experiments had been made in various quarters, and had been abandoned.—*Cornish v. Keene*, 360

OBJECTIONS—

A patentee is not to be entrapped by captious objections to a specification, which does not go to the merits of it.—*Morgan v. Seaward*, 92

A Court will require the defendant to furnish such particulars as should enable the plaintiff to understand what is to be proved at the trial; not, indeed, to lay open his case, or the evidence by which it is to be supported, but to give a reasonable account of the nature of the transaction.—*Boulnois v. Mackenzie*, 406

When the statute says that notice of objection shall be given, it means such notice that shall convey information to the mind of the party, and such as an honest party meant to rely upon at the trial.—*Fisher v. Dewick and another*, 418

PATENT—

The man who first gets his patent, is considered the first inventor in law, although others may have preceded him in invention, provided the same are not made known.—*Cornish v. Keene*, 366

A good patent may be obtained for an invention which requires the use of a previous patent still in force.—*Crane v. Price*, 676

PLEA—

That the use of the patent by the defendant, before the date of a disclaimer, did not render him liable, the whole patent being bad before disclaimer; held to be a good plea.—*Perry v. Skinner*, 404

PRINCIPLES—

You cannot take out a patent for a principle; you may take out a patent for a principle, coupled with the mode of carrying the principle into effect.—*Jupe v. Pratt*, 298

If a party invent one mode of applying a principle in a certain manufacture, he may get others to find out or invent other modes; if the patent be for the application of a principle, the patentee having already invented one mode of application, and the putting of such other modes into the specification, if they be not claimed separate from the principle, will not injure a patent.—*Jupe v. Pratt*, 299

PRIVY COUNCIL—

In applications for extension of the period of a patent, this Court will require strong evidence of merit, and of hardship.—*Erard's Patent*, 117

The Court will hear the petition of a patentee, and will report favourably to the Crown, that the period of the patent ought to be extended, although the patentee has failed in supporting his patent.—*Kay's Patent*, 168

PROFITS—

In applications to the Privy Council to extend the period of letters patent, the profits which are taken into account, are those which exceed the ordinary charges for making like articles; the profits which are really made by reason of a patent, are those moneys which are obtained over and above ordinary trade charges for like articles of manufacture.—*Galloway's Patent*, 107

PROLONGATION OF LETTERS PATENT, *See* "PRIVY COUNCIL," AND "EXTENSION."

PUBLIC USE—

To construct paddle-wheels in private, and to send two sets abroad to be tried, previous to a patent being taken, is not a publication or public use which will invalidate a patent.—*Morgan v. Seaward*, 100

If the patentee has before the patent constructed machines for sale as an article of commerce or gain to himself, the invention would not be new.—*Morgan v. Seaward*, 101

The payment of A.'s workmen by B., for making a machine according to the invention of A., and sending the machine abroad to be used there by B. and his partners, is not a publication.—*Morgan v. Seaward*, 101

If it be taken from a book published in England, and open to all, it would be a question for the jury.—*Cornish v. Keene*, 365

The production of a specification to a previous patent, but inrolled after the patent in question was granted, containing the same invention, is no evidence that the invention claimed under the second patent was old.—*Cornish v. Keene*, 380

SECRET USE, *See* "PUBLIC USE."

SPECIFICATION—

The patentee should fairly state in his specification the real nature of his invention, and also how it can practically be carried into effect, in order that the public may know what is prohibited ground, because that is the premium which the patentee pays for the monopoly which he receives. —*Morgan v. Seaward*, 91

A specification must be such, that a workman engaged in the business may be able to produce the invention, not by any invention of his own, but by following the specification.—*Morgan v. Seaward*, 91

If a patentee knows any particular mode by which his invention can be most conveniently carried into effect, he ought to state it in his specification.—*Morgan v. Seaward*, 92

A specification would tend to mislead, if it stated that a whole class of substances may be used to produce a given result, when in fact only one is capable of doing it.—*Bickford v. Skewes*, 459

A specification which claims two things separately is bad, if either or both be old; and the circumstance of describing the use of the two in combination, though such combination be new and useful, will not sustain the patent.—*Kay v. Marshall*, 169

SPECIMENS—

The Court in an action for infringement, will not require the plaintiff to give to the defendant before trial, specimens of his manufacture.—*Crofts v. Peach and others*, 233

STATUTES—

21 James I., c. 3 (9); 11 Hen. VI., c. 1 (16); 13 Eliz., c. 6 (17); 5 & 6 Will. IV., c. 83 (17); 2 & 3 Vic. c. 67 (123)

SUBJECT MATTER, *See* "INVENTION AND MANUFACTURE."

SUPPRESSING—

If a party in applying for an injunction, suppress a material fact, the Court will dissolve the injunction.—*Abbott v. Williams and others*, 400

USE, *See* "PUBLIC USE."

USEFUL—

Where a patent is taken for two things, a steam-engine and a paddle-wheel, the patent is void if one is found to be not useful; but where a patent is for a machine consisting of several parts, and one or more is found not to be useful, that will not invalidate a patent.—*Morgan v. Seaward*, 104

VALIDITY—

The validity of a patent comes into question, in a plea that the invention is not new.—*Gillett v. Wilby*, 567

WORKMAN—

A workman must use his skill in making an invention from a specification. If a drawing is defective, and the specification says that two things are to move, he is to make them move, and not follow the drawing with such exactness, as to prevent their moving.—*Morgan v. Seaward*, 92

Macintosh, Printer, Great New-street, London.

3 6105 063 703 107

3 6105 063 703 107